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ABSTRACT

This report examines conditions in the California nursery industry and develops a comprehensive baseline of labor force requirements and practices. A telephone survey was conducted with 167 randomly selected nurseries in a 10-county area. Additionally, 455 workers and 85 employers participated in on-site interviews. Workers were classified as foreman or crew leader, technical worker, and field or shipping worker. The average worker was male, 36 years old, and married with two children; lived in a house or condominium; spoke Spanish; was born in Mexico; and had a sixth-grade education. More highly skilled and more highly paid workers tended to have more education (typically 3 years in the United States and several years elsewhere) and tended to have better language skills in both English and Spanish. Employers considered communication and language skills as the most important job skills for all workers, followed by management skills for foremen and crew leaders, plant propagation skills for technical workers, and ability to follow instructions for field and shipping employees. Other desirable skills sought by employers were reading and writing, basic math, safety awareness, and horticultural knowledge. This study indicates that the California nursery industry labor force is mature and stable with over half of workers employed in the industry for more than 7 years. It suggests that government-sponsored training programs should focus on basic skills. Appendices include research methodology and survey questionnaires with descriptive statistics. The report contains numerous tables and graphs. (LP)

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CALIFORNIA AGRICULTURAL STUDIES

92-3



Serving the People
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California Nursery Workers and the Nursery Industry

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RC019330



CALIFORNIA NURSERY WORKERS AND THE NURSERY INDUSTRY

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September 1992

This report was prepared for the State Employment Development Department (EDD) under Interagency Agreement No. M100784 with funding provided by the U.S. Department of Labor. Contractors conducting State research projects are encouraged to state their findings and judgments freely; therefore, the contents of this report are solely the representation of the contractor, and do not necessarily represent the official position of EDD.

EXECUTIVE SUMMARY

This study was conducted for the California Employment Development Department (EDD) in order to gain a general understanding of conditions in the California nursery industry and to prepare a comprehensive baseline of labor force requirements and practices. The study was done via telephone and on-site interviews with nurseries throughout California from December 1991 to February 1992. A summary of the major findings is presented here.

The California nursery industry labor force is mature and stable. More than 50 percent of the workers have been employed in the industry for over seven years. The average length of employment, as reported by employers, ranges from five to ten years. More than half of the employer respondents said that the average length of employment is increasing.

The nursery industry is not characteristic of the California agricultural sector as a whole in that substantial seasonal fluctuations in the labor force are not observed. At its peak, seasonal work accounts for only 10 to 20 percent of the work force. To meet increased production demands, employers tend to increase hours worked by current employees instead of hiring extra workers. Most employees work in excess of 40 hours per week.

Annualized full-time wages for the three studied job classifications are: foreman/crew leader employees, \$22,500; technical employees, \$17,200; and field/shipping employees, \$12,900. The vast majority of employers pay their production employees by the hour and feel they are currently paying the average industry wage. Most employers say they grant annual wage increases and give employees the opportunity to earn bonuses.

As might be expected, the higher skilled and more highly paid employees tend to have more education. These same employees will typically have about three years of education in the U.S., in addition to several years of schooling in their native country. They also tend to have better language skills in both English and Spanish.

Communication and language skills are the most common skills considered important for all workers to have in the nursery industry. These are followed by management skills for foreman/crew leaders, plant propagation skills and knowledge for technical workers, and the ability to follow instructions for field/shipping employees. Reading and writing, basic math, safety awareness and a knowledge of horticulture are other highly desirable skills sought by nursery employers.

The "average" California nursery industry worker is male, 36 years old, married with two children, lives in a house or condominium, speaks Spanish, was born in Mexico and has a sixth grade education. He will typically find a job in the nursery through word of mouth from relatives and friends, or by walking in off the street to inquire about employment.

Twenty percent of interviewed workers are female; while many of them have permanent positions, women hold twice the number of seasonal jobs that men do and have fewer technical positions.

Nursery firms tend to hire at the field/shipping employee level and then promote from within to the technical and foreman/crew leader positions. Most employers use on-the-job training for all their job classifications. Most employers feel that they have a sufficient labor supply to meet their hiring needs and frequently use word of mouth to recruit new employees.

Most of the nurseries contacted for this study have been in business over 20 years, have 20 or fewer acres and have some portion of their operation under cover. Seven out of ten nurseries supply decorative plants and ground cover. Most of the shade trees and shrubs and food trees and plants are produced by Southern California growers.

The general outlook for the California nursery industry shows optimism for the future. Most employers statewide feel that the three year outlook for their industry is good, while the current outlook is fair.

The nursery industry's biggest concerns are product imports and their effect on prices, water, general economic conditions and increased government regulations.

Most nurseries have been impacted by increasing urbanization and by the drought. In both cases, the impacts are mixed. While some nurseries come under land price pressure from encroaching development, they also gain many new clients from that same development. Likewise, while the drought has made the cost of production higher and made growing more difficult, it has also resulted in increased business due to burgeoning demand for "environmental" horticulture products and services.

The impact of the Immigration Reform and Control Act (IRCA) on nurseries has also been mixed. Almost everyone affected by IRCA agrees that one major impact has been an increase in paperwork and bureaucracy. While some employers feel that IRCA has increased their turnover and made it more difficult to retain employees, other employers have commented that it has had a positive influence on the availability and stability of the labor force.

Another area of mixed opinion is the impact of mechanization on the nursery industry. Most employers agree that mechanization will continue to increase. Some employers say this growth will cause fewer jobs to be needed, while other

employers see a need for increasing numbers of well-trained technicians able to operate, repair and fully utilize this new equipment.

Most nursery firms in California are aware of the services that EDD offers and one in four firms have used EDD services to fill entry-level job openings. In terms of potential EDD or other government programs, the greatest area of benefit to the industry (for both employers and employees) would be training in the basic skills of reading, writing and math.

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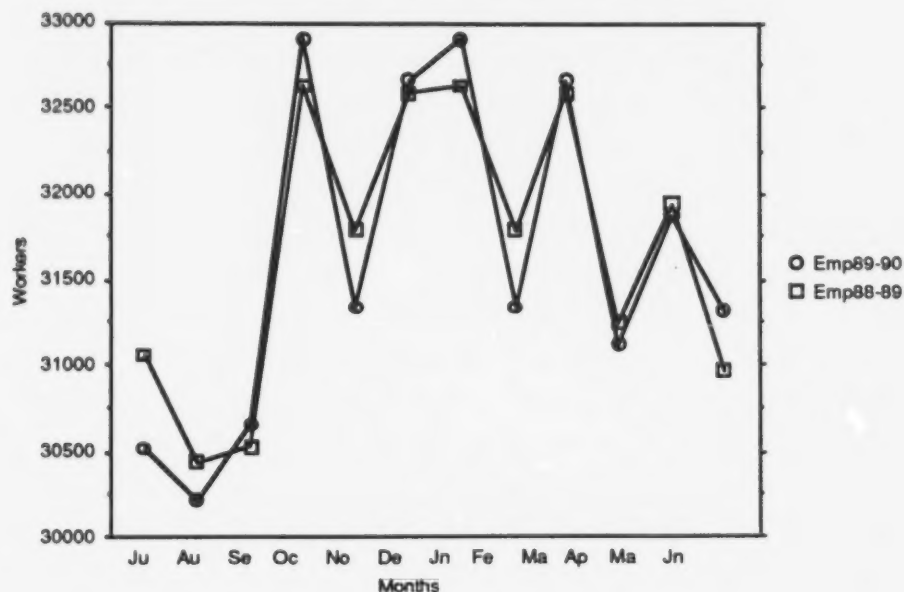
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INTRODUCTION

The intent of this study is to: 1) provide the Employment Development Department (EDD) with an understanding of the California nursery industry's work force requirements; and 2) to present general conditions within the industry. The nursery industry is identified as Standard Industrial Classification (SIC) 181 which includes ornamental floriculture and nursery products. The SIC is the statistical classification standard underlying all establishment-based Federal and State economic statistics classified by industry. The SIC is used to promote the comparability of establishment data describing various facets of the U.S. economy.

At the present time, approximately 1,200 firms are operating in the industry. The average annual employment of the industry is roughly 32,000 workers. Figure 1 below shows the fluctuations of employment from July of 1988 through June of 1990. The range of employment during this time is between 30,000 and 33,000 workers.

Figure 1
Monthly Nursery Employment



Source: EDD Agricultural Employment Statistics, 1988, 1989, 1990.

The size of this labor force makes the nursery industry one of the six largest production agricultural employers in California. Information gathered during this study will enable EDD to compare the labor makeup and needs of this industry with the other major agricultural employers in the state. This study is the first research effort to focus solely on the California nursery industry and its labor requirements.

NURSERY INDUSTRY STRUCTURE

The nursery industry consists of firms engaged in the production of a wide spectrum of agricultural products. (Products were grouped into four categories: shade trees and shrubs, decorative plants and ground cover, food trees and plants, and specialty crops. Examples of the specific products included in each of these categories are listed in question 1 (Q1) of the Employer Survey which is located in Appendix B.) The industry supplies products to other agricultural producers, to the horticulture industry and directly to the consumer. This diversity of buyers enables the industry to exhibit a high degree of stability. The nursery industry represents a critical element of the state's agricultural sector.

The use of 'container production' characterizes the state of production in the nursery industry. The technology associated with this type of production has introduced new soil mixture, moisture control and nutrient injection methods. The California nursery industry is able to propagate, grow and ship container-grown stock year round.¹ According to the 1987 Census of Agriculture, the California nursery industry accounts for almost 25 percent of the sales of all nursery-related products in the United States. This is over one and a half times greater than the state of Florida, which is the second largest producer of nursery products. Sales for the nursery industry in California in 1987 totaled 1.4 billion dollars. The fastest growing purchaser of nursery products is the environmental horticulture element, which maintains and improves the functional use of plants in populated areas and enhances ornamental production.²

¹ Nursery Management: Administration and Culture, 2nd edition by Harold Davidson, Roy Mecklenburg, and Curtis Peterson; Prentice Hall, 1988; page 30.

² "Environmental horticulture: "growth" industry in California", by Dennis R. Pittenger, Victor A. Gibeault, and Steve T. Cockerham; California Agriculture; May-June 1991; University of California.

STUDY OBJECTIVES

In order to accomplish the objectives of this report, three separate areas of the nursery industry were analyzed. These areas are: 1) worker characteristics, 2) employer labor requirements and 3) employer expectations with respect to the future of the industry. This information will provide EDD with the opportunity to evaluate its role in serving the California nursery industry and its workers. Since this project is essentially a baseline investigation, it will provide a foundation from which additional research and comparisons can be made.

STUDY METHODOLOGY

Primary data were collected from both employers and employees. First, a telephone survey was conducted of 167 randomly selected firms in a ten county area. Appendix A provides additional details on the sampling and survey design as well as a statement of statistical reliability. These counties accounted for roughly 75 percent of the firms and employment in the industry. The telephone survey concentrated on general demographic characteristics of the firm, hiring practices, compensation and employment levels, and industry outlook. Next, a subset of 85 firms was solicited to participate in the field survey portion of the data collection effort. During the field survey, 455 workers and 85 employers were interviewed. The employers' field survey concentrated on the skill requirements needed for field/shipping workers, technical workers and foremen/crew leaders. The workers' survey dealt with collecting general demographic information, job activity, wages and language skills. Information from these interviews form the data base for this report.

For the purposes of this study, workers were classified into three categories: foreman/crew leader (fore/cl), technical worker (tech) and field/shipping worker (field/ship). The foreman/crew leader category encompasses all workers who have any responsibility for one or more employees. The technical worker category includes all workers who are involved in plant propagation, pest control, pruning, or other technical activities. Finally, the field/shipping category represents all other production-related activities. The terms "worker" and "employee" are used synonymously throughout this report.

FINAL REPORT OUTLINE

Following this introduction, a discussion of the results from the nursery worker field survey is presented in Section I. This discussion primarily deals with the development of the nursery workers' profile. This profile contains a description of general demographics, work experience and activity, compensation, language skill levels and safety/health issues for the nursery worker. Results from both the telephone and field employer interviews comprise Sections II and III of this report. Section II presents the labor baseline for the nursery industry. A general firm profile, hiring practices, compensation and skill requirements are developed and discussed in this section of the report. A discussion of the nursery employers' industry outlook is the topic of Section III. A general industry outlook, a labor outlook and a discussion of EDD's relationship with the industry, are addressed in this section. The final section of the report, Section IV, contains concluding remarks. Two appendices are included in this report. Appendix A discusses the methodology used for the study and contains a statement of statistical reliability. Copies of all survey instruments used in the study are presented in Appendix B. Included on each of these questionnaires are selected descriptive summary statistics.

Section I

NURSERY WORKERS' PROFILE

This section of the report presents the results of the workers' survey and, where appropriate, information from the employers' surveys. A total of 455 workers were interviewed during the months of December 1991 through February 1992 in the ten county study area. The nursery worker profile developed in this section is made up of five elements. These elements are:

- general characteristics (demographic)
- work experience and activity
- compensation
- language skill level
- safety/health

Each of the above elements provides a different look at the type of workers who make up this industry. Together, these elements comprise a profile of the California nursery industry worker.

GENERAL CHARACTERISTICS

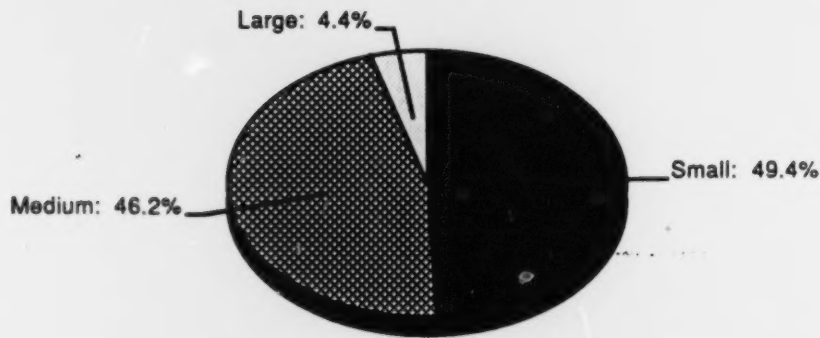
Overview of Working Population

The information base for determining the working population is EDD's Employer file for the year 1990. A total of 1,226 firms employed one or more individuals during that year. The study area³ was made up of 910 such firms. Figure 2 shows how these firms are distributed by firm size.⁴ The vast majority of firms have less than 100 employees, while almost half of the firms have less than ten employees.

³See Appendix A for definition of study area.

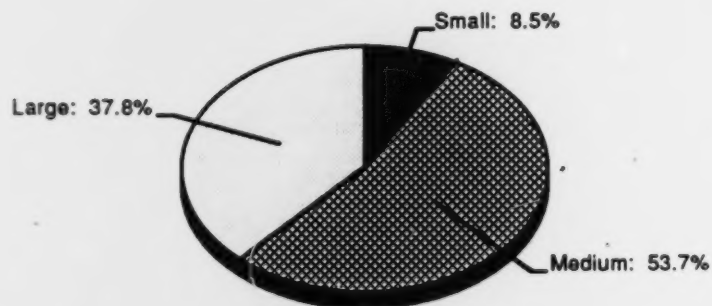
⁴See Appendix A for definition of firm size.

Figure 2
Percent of Firms by Firm Size



Statewide, these firms employed nearly 30,000 individuals in 1990.⁵ Employment within the study area was slightly less than three-quarters of the total employment level or approximately 22,000 employees. Figure 3 shows the breakdown of employment by firm size. As one would expect, the representation of the small and large firms changes dramatically.

Figure 3
Percent of Workers Employed by Firm Size

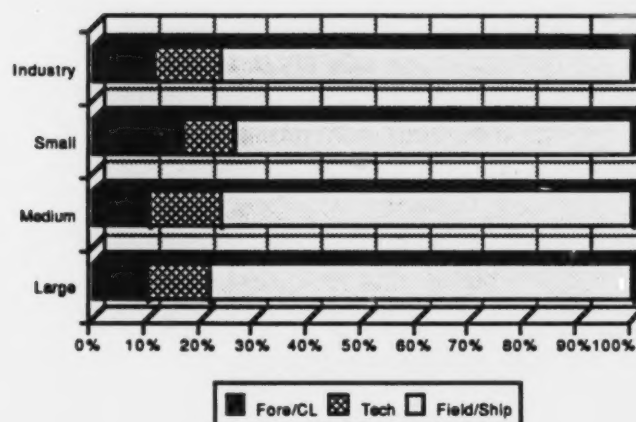


Results from the telephone survey showed that about 17 percent of the work force is engaged in administrative and sales-related functions. During 1990, the

⁵According to EDD figures, firms with one or more employees employed 29,988 individuals.

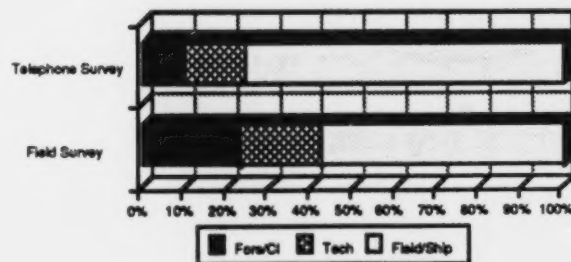
nursery industry employed approximately 24,000 workers. For 1991, the number of workers in the industry is expected to be somewhat less than the 24,000 worker number.⁶ As mentioned above each of the workers was classified into one of three categories: foreman/crew leader (fore/cl), technical worker (tech) and field/shipping worker (field/ship). These categories for job classification follow a skill hierarchy, with the field/shipping worker category representing the least skilled workers and the foreman/crew leader category representing the highest. Figure 4 below compares the distribution of the three worker categories and the three different firm size classifications.⁷

Figure 4
Comparison of Worker Categories by Firm Size



⁶Some of the responses to the telephone survey indicated that employment this year was lower than the previous year.

⁷The data for this table was generated from the telephone survey only. The field survey was not designed to generate an estimate of the distribution of workers' categories. The goal of the survey was to sample as many workers as possible and to make sure that each category was adequately represented. Therefore, the foreman/crew leader and technical categories were over-sampled.



The distribution of workers across categories for both firm size and job classification is fairly stable. Three-quarters (76.3%) of the work force is made up of field and shipping workers. Technical workers comprise 12.4 percent and foreman/crew leaders make up the remaining 11.3 percent. Smaller firms tend to have a greater proportion of lead personnel (16.7%) than either of the other two firm sizes.

Composition of Work Force

The composition of the California nursery industry work force will be presented with respect to the following types of characteristics:

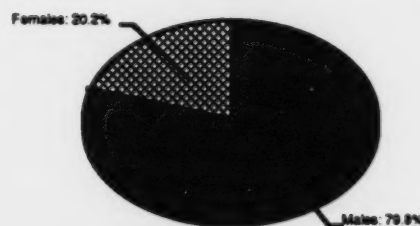
- gender of worker
- seasonality of work force
- age of worker
- education of worker
- marital status of worker
- dwelling unit of worker
- country of birth/residence of worker
- second job activity of worker

Together these criteria provide a demographic profile of the nursery worker. These different measures were generated from the workers' field survey.⁸

Gender of Workers

Figure 5 shows the proportional relationship between female and male workers which was compiled from the field survey.

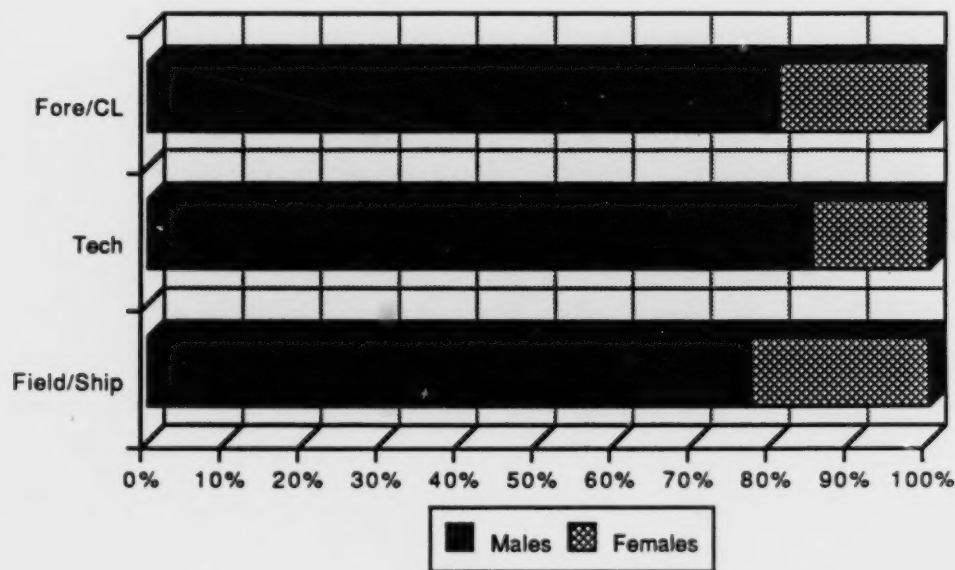
Figure 5
Work Force by Gender



⁸See footnote 7 of the sampling design of the field survey and Appendix A.

Males make up approximately 80 percent of the work force.⁹ The female population represents a significant element of the nursery work force. The composition of the work force between males and females with respect to the three different job classifications is shown in Figure 6 below.

Figure 6
Comparison between Job Classifications and Gender



Females tend to hold a disproportionately lower number of technical jobs (14.8%) with respect to their proportion of the work force. They do, however, hold about the expected number of lead type positions.

⁹As mentioned in footnote 5, the sampling design for the field survey was not expected to generate estimates of subpopulations in the sample universe. However, in discussions with the field interviewer, it was found that he believed that the estimate was at the low range of what he saw during the course of conducting his interviews. He estimates that the percentage of female workers ranged from 20 to 30 percent.

Seasonality of Work force

Data from EDD's Agricultural Employment Statistics for the years 1988, 1989 and 1990 show fluctuations in the work force of roughly ten percent over the course of a year. In general agreement, the field survey showed that about nine (8.6%) percent of the workers sampled classified themselves as seasonal workers. Respondents were responsible for classifying themselves as either permanent or seasonal workers based upon their own definition of these terms. Female employees are almost twice as likely to be seasonal workers as male employees (13 percent of the female work force was seasonal compared to 7 percent of the male work force). The telephone survey showed a 10 percent seasonal work force at the time of the interview and up to a 20 percent seasonal work force during the busiest times of the year. The work force appears to be fairly stable throughout the year relative to the state's agricultural sector as a whole. To meet increased work demands, employers tend to increase hours worked by employees instead of hiring additional workers.

Selected Demographic Characteristics

Table 1 presents selected worker characteristics not only in terms of the total work force but also by job classification, permanent/seasonal and gender. The characteristics are average age, education, marital status and children, and type of residence. The average age of the nursery worker is 36 years with approximately 50 percent between the ages of 26 and 42. Foreman/crew leaders and technical workers tend to be somewhat older while field/shipping workers tend to be somewhat younger, as would be expected. Worker education levels for non-U.S.-acquired education are fairly constant between the different worker subgroups at about five and one-half years.

Table 1
Selected Demographic Characteristics of Workers¹⁰

Characteristic	All Workers	Job Classification			Permanent	Seasonal	Male	Female
		Field/Ship	Technical	Foreman/CL				
Age (in years)	35.5	33.9	37.4	38.1	35.4	36.7	35.3	36.5
Years of Education								
In US	1.6	0.6	2.7	2.9	1.7	0.1	1.4	2.1
Elsewhere	5.4	5.4	5.3	5.5	5.5	5.1	5.5	5.2
Married	74.7%	69.3%	77.3%	85.8%	75.5%	66.7%	75.5%	71.7%
Have Children	77.7%	72.9%	84.9%	83.8%	78.3%	71.8%	75.9%	84.8%
Number of Children	1.7	1.6	1.6	1.8	1.7	1.7	1.7	1.6
Type of Housing								
House/Condo	56.5%	54.8%	59.1%	58.5%	57.5%	46.2%	55.4%	60.9%
Apartment	25.5%	26.1%	31.8%	18.9%	26.4%	15.4%	26.4%	21.7%
Company-owned	12.5%	13.4%	5.7%	16.0%	10.8%	30.8%	12.9%	10.9%
Mobile Home	3.9%	3.8%	2.3%	5.7%	3.6%	7.7%	3.6%	5.4%

Among all worker groups, educational training in the U.S. is substantially less – an average of less than two years. This difference is less dramatic if those workers who have no education in the U.S. are omitted. The average years of education becomes 4.92 for the remaining workers.¹¹ Nearly 70 percent of the workers had no education in the U.S. As would be expected, the higher skilled and higher paid workers have more education. Seasonal workers have virtually no education in the U.S.

Three-quarters of the workers are married. Foreman/crew leaders are more likely to be married than either technical or field/shipping workers. Almost 80 percent of the workers have children. More females than males have children. The

¹⁰In selecting a central tendency measure to be used for non-percentage characteristics, mean, median, and mode were considered. The mean values were selected because they provided the most meaningful representation of the data.

¹¹The average years of education by workers having some education in the U.S., when grouped by the categories in Table 1, is as follows:

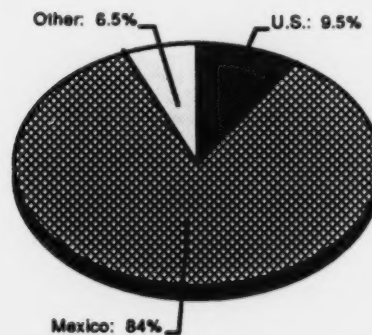
Characteristic	All Workers	Job Classification			Permanent	Seasonal	Male	Female
		Field/Ship	Technical	Foreman/CL				
Years of Education	4.9	3.0	6.8	5.6	5.0	1.1	4.7	5.6

typical worker has slightly less than two children. This result is true across each subgroup. Over half of the workers live in a house or condominium. Company-owned housing is used by 12 percent of the workers. Seasonal workers rely on company-owned housing 30 percent of the time. Foreman/crew leaders and technical workers are almost three times more likely to use company-owned housing. The above figures illustrate a fairly stable and mature work force which is not highly educated.

Country of Birth/Residence of Worker

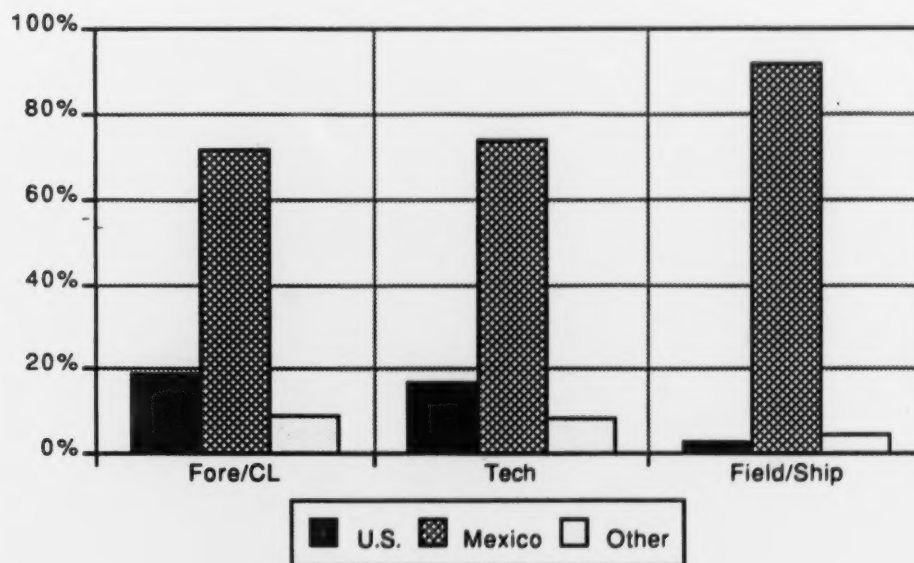
Nearly 85 percent of the workers surveyed were born in Mexico. When considering the gender of the worker, female workers drop to 80 percent. Figure 7 illustrates the proportional relationship between the countries of birth for the workers.

Figure 7
Country of Birth for Workers



When separating workers by job classification, an interesting trend emerges. Technical workers and foreman/crew leaders are 5 times more likely to be born in the U.S. than are field/shipping workers. Over 90 percent of the field/shipping workers are born in Mexico. Figure 8 captures these results.

**Figure 8
Country of Birth by Job Classification**

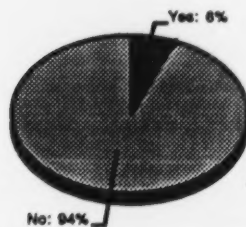


Second Job Activity of Workers

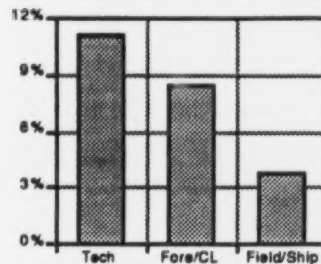
The vast majority of workers (93.6%) responded that their job in the nursery industry was their only job. Of the approximately six percent of workers with a second job, they spent an average of 11 hours per week at the second job. A wide range of other jobs was identified, from maintenance to computer imaging. No single type of second job was dominant. Agricultural-related jobs were not mentioned among those workers who had a second job. Figure 9 summarizes the characteristics of the second job worker.

Figure 9
Workers with Second Job

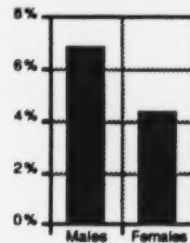
Workers with Second Job



Workers with Second Job by Job Classification



Male and Female Workers with Second Job



Males are more likely to have second jobs than females. Of the three job classification groups, technical workers are more likely to have a second job while field and shipping workers are least likely.

WORK EXPERIENCE AND ACTIVITY

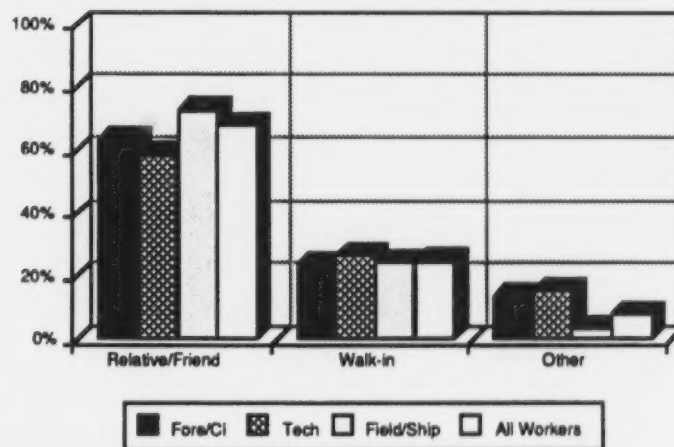
There exists a number of elements that describe different facets of the work activity and experience of the worker. These elements include the following:

- how did worker find out about job?
- what was the worker's first job classification?
- how long ago was the worker's last promotion?
- how long has the worker worked in the industry?
- how many hours per week does the worker work?
- how do workers get to work?

How did worker find out about job?

Nearly 70 percent of the workers relied upon a relative or a friend to hear about a job opening at their present place of employment. Figure 10 compares how different types of workers found out about their jobs. Those employed at the more skilled positions are more likely to use other means of finding a job, such as advertisement. The telephone survey asked a similar question of the firms. Nearly 85 percent of the firms responded that workers heard about the job either by word of mouth (relatives/friends) or from the foreman (walk-in). Seasonal workers were more likely to be walk-ins when looking for a job than permanent employees.

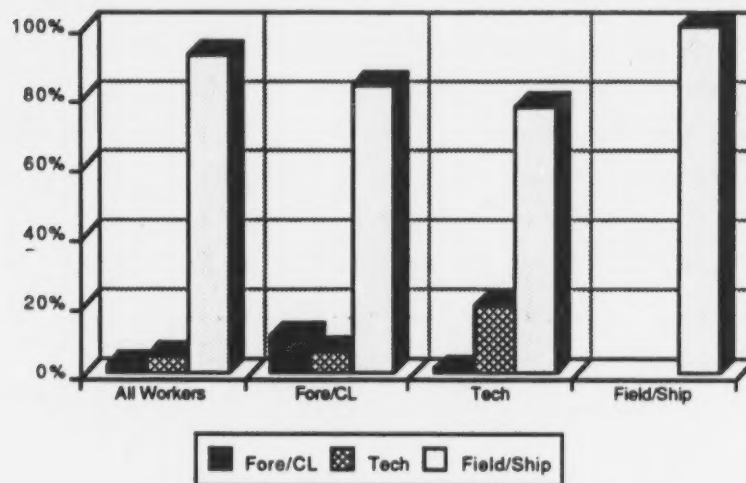
Figure 10
How Worker Found Job by Job Classification



What was the worker's first job classification?

This question was asked with respect to their current place of employment. As Figure 11 shows, the vast majority of workers begin as field and shipping workers. It appears that most workers start doing field and shipping activities and then work their way into the more skilled positions.

Figure 11
Workers' First Job Classification by Job Classification



Given this pattern, one would expect the average length of employment in the firm and the industry to be fairly substantial. Technical workers are the most likely to be hired directly into their respective job classification.

How long ago was the worker's last promotion?

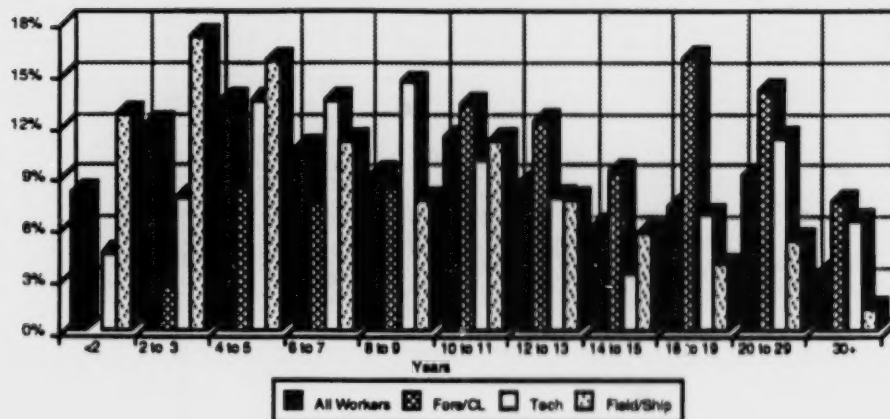
Almost half (48.7%) of all workers surveyed have never received a promotion. The worker was not given a definition of what promotion meant during the interview. Given the employment nature of the industry, i.e., a large field and shipping work force, this result is not entirely unexpected. Of those workers receiving a promotion, field and shipping workers are most likely to have been given a promotion (37.8%) in the last year, followed by technical workers (29.6%) and then foreman/crew leaders (23.4%). Nearly 30 percent of workers receiving a promotion have been promoted within the last year, while 80 percent have received at least one promotion in the last five years.

How long has the worker worked in the industry?

The typical worker has worked in the industry for 10 years. Male workers on the average have worked longer in the industry than female workers (roughly two years longer - 10.6 versus 8.5). When considering job classification, the length of employment follows along expected lines: foreman/crew leaders, 14.6 years; technical workers, 11.5 years; and field and shipping workers, 8.0 years.

Seasonal workers have worked in the industry an average of six years. Close to 50 percent of all workers have worked in the industry for about 9 years. Figure 12 shows the number of years workers have been employed in the industry as a group and by job classification. The more skilled the worker, the longer the worker has been in the industry.

Figure 12
Length of Industry Employment for All Workers
by Job Classification

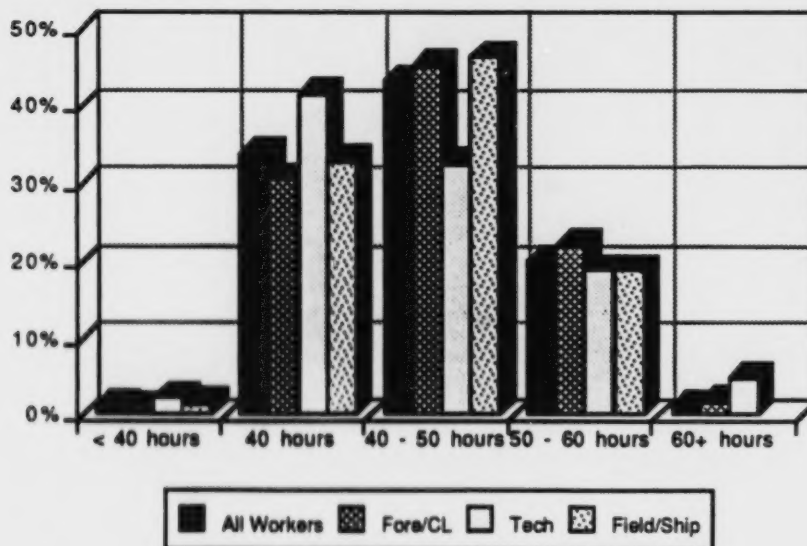


The evidence suggests that the labor force in this industry is mature and stable with a significant proportion of workers likely to stay in the industry.

How many hours per week does the worker work?

Most workers in the industry work in excess of 40 hours each week. The average hours worked was reported at 46. Nearly 65 percent of the workers work more than 40 hours each week. Less than two percent of the workers reported working less than 40 hours. Males tend to work longer hours than females (46.8 hours to 44.0 hours). Permanent workers work slightly longer hours than seasonal workers (46.3 hours to 44.6 hours). With respect to the three job classifications, foreman/crew leaders work an average of 47 hours each week, with technical and field/shipping workers averaging 46 hours per week. Figure 13 shows the relationship between the number of hours worked and job classification.

Figure 13
Hours Worked by Job Classification

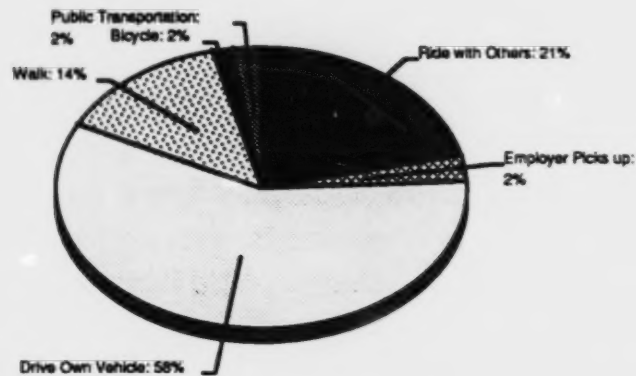


In meeting production demands, it appears that employers rely on adjusting the utilization of their existing work force and choose not to change their overall level of employment.

How do workers get to work?

Workers tend to drive to work either by themselves or with other workers. Field and shipping workers (32.6%) are more likely to ride with others than either foreman/crew leaders (5.6%) or technical workers (8.0%). Ten percent of the foreman/crew leaders are picked up by their employer for work. This is three times greater than the overall worker population. A third of the seasonal workers are able to walk to work. Nearly 13 percent of the workers live in company-owned housing, which is in line with the 14 percent who walk to work. Figure 14 below depicts proportional use of each of the reported modes of transportation.

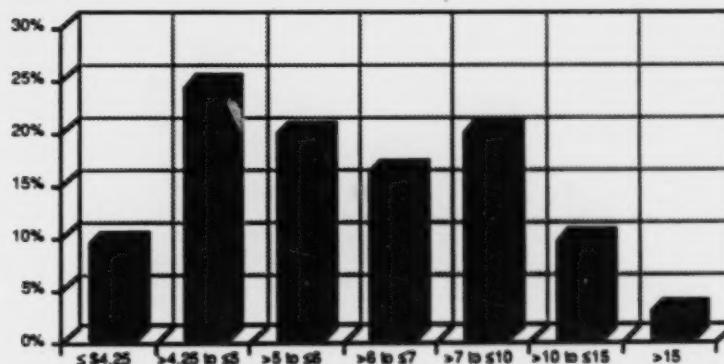
Figure 14
Modes of Transportation Used by Workers to Get to Work



COMPENSATION

The compensation patterns that emerged from the survey further underscore the stable nature of the work force and demonstrate that higher skilled workers receive higher wages. The average hourly wage in the industry was \$6.90. The distribution of current wages was somewhat positively skewed with a mode of \$4.25 and a median of \$6.00. Figure 15 illustrates this distribution.

Figure 15
Distribution of Current Hourly Wages for All Workers



Wage information was disaggregated by job classification, gender, seasonal workers and firm size. Table 2 presents the starting and current reported wages for each of these categories. In each case, as can be seen by reviewing Table 2, the wages correspond to expected relationships. Workers with greater skill and responsibility are rewarded with higher wages. For example, the foreman/crew leaders' average wage is higher than the technical workers', which is higher than the field/shipping workers'. Roughly a two dollar difference exists between each of the job classifications. The annualized wages¹² for the three different classes of workers are as follows: foreman/crew leaders, \$23,500; technical workers, \$17,200; and field/shipping workers, \$12,900. Male workers tend to earn more per hour than female workers. Some of this difference can be accounted for by the fact that a greater proportion of females are field and shipping workers. Seasonal workers' wages reflect the nature of their work (field/shipping) with an average wage of less than five dollars per hour. Finally, the larger the firm's employment, the higher the average wage.

The starting wage information underscores the mature nature of the work force. Reported starting wages, which in a number of cases go back over 10 years ago, appear always to be at the minimum wage level. Nearly 75 percent of the workers' starting wages were under or equal to the current minimum wage level.¹³ The average starting wage for all workers was \$3.94 per hour. The distribution of starting wages is skewed in the negative direction with a mode of \$4.25 and a median of \$4.17.

¹²Annualized wages were calculated using the following formulation:

Annual wages = Average Wage x Average Hours Worked per Week (50 hours) x 50 weeks. Overtime wage rates were not used because average hours worked were less than 60 hours per week.

¹³There is no information to suggest that employers were or are paying less than the minimum wage at the time of hire. The above statement reflects only benchmark information.

Table 2
Hourly Wages for Workers by Selected Groups

	Starting Wage	Current Wage
All Workers	\$3.94	\$6.90
Foreman/Crew Leader	3.52	9.55
Technical	4.17	7.52
Field/Shipping	4.04	5.63
Male	3.98	7.05
Female	3.78	6.29
Seasonal	4.07	4.83
Small Firms	3.57	6.05
Medium Firms	3.83	6.56
Large Firms	4.17	7.50

Table 3 presents a distributional look at the wage structure for each of the groups used above. The majority of foreman/crew leaders' wages range between \$7 and \$15 per hour. At the other end of the scale are the field/shipping workers, with wages mostly in the \$4.25 to \$6 per hour range. The technical workers' wages range between \$4.25 and \$10 per hour. Nearly 80 percent of the seasonal workers earn five dollars or less.

Table 3
Distributional Wage Structure for Workers by Selected Groups

Wage Rates	All Workers	Foreman/ Crew Leader	Technical	Field/ Shipping	Male	Female	Seasonal
≤ \$4.25	9.0%	1.0%	3.5%	14.1%	9.0%	8.9%	38.5%
>4.25 to ≤5	24.0%	2.9%	20.7%	33.6%	23.3%	26.7%	38.5%
>5 to ≤6	19.4%	14.6%	13.8%	23.4%	17.4%	27.8%	15.4%
>6 to ≤7	16.1%	13.6%	17.2%	16.8%	16.8%	13.3%	5.1%
>7 to ≤10	19.7%	33.0%	28.7%	11.3%	20.2%	17.8%	2.6%
>10 to ≤15	9.2%	28.2%	11.5%	0.8%	10.1%	5.6%	0.0%
>15	2.6%	6.7%	4.6%	0.0%	3.2%	0.0%	0.0%

Comparison of Worker Survey and Employer Survey Wage

Both the Worker Survey and the Employer Survey collected information concerning wages paid to workers. Wage data was collected with respect to each of the three job classifications. In the Worker Survey, each respondent was asked about his or her current wage rate, while in the Employer Survey, the respondent was asked about the current average wage rate. In conducting the Employer Survey, the interviewer sought to question the individual who knew the most about the firm's labor activity. This individual was usually the owner or general manager. The average wages are presented in Table 4 below.

Table 4
Average Wages From Employer and Worker Surveys by Job Classification

	Foreman/Crew Leader	Technical	Field/Shipping
Employer Survey	\$8.68	\$7.11	\$5.72
Worker Survey	\$9.55	\$7.52	\$5.63

The average wage for the foreman/crew leaders and technical workers is lower in the Employer Survey, while the opposite is true for the field and shipping workers. The technical and field/shipping worker difference is not as substantial as the difference in the foreman/crew leader wages.¹⁴ Below are three figures which show the distributional relationships between the two surveys (Figures 16, 17 and 18).

¹⁴This could be a result of the way the survey was conducted. Also, the average earning figures collected from the employer surveys were based on the memory of the respondent.

Figure 16
Foreman/Crew Leader Wage Distributions From Employer and Worker Surveys

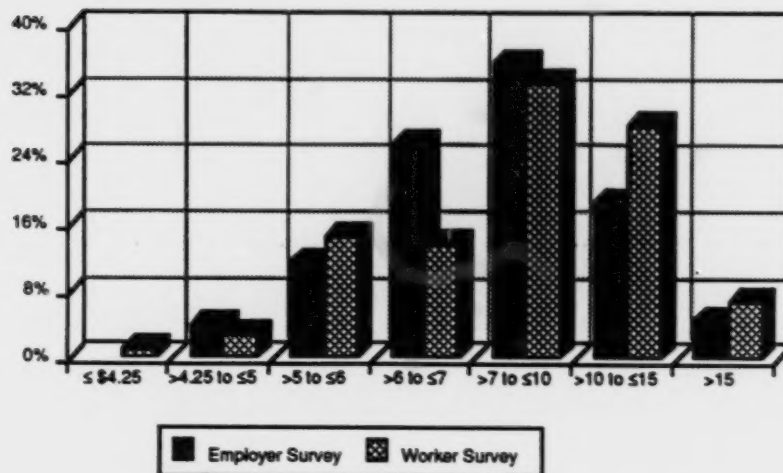


Figure 17
Technical Worker Wage Distributions From Employer and Worker Surveys

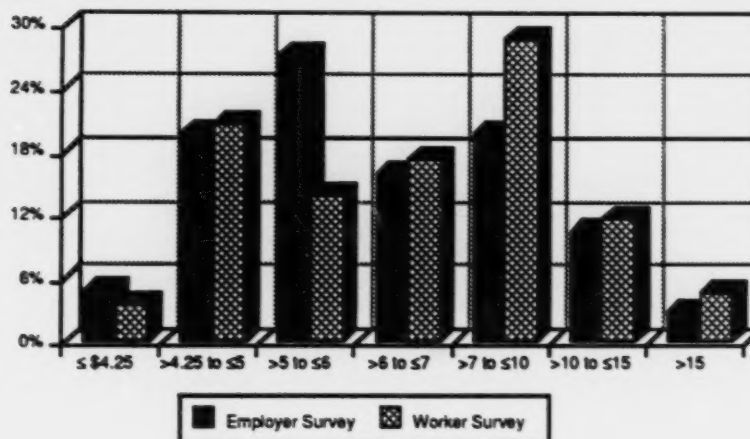
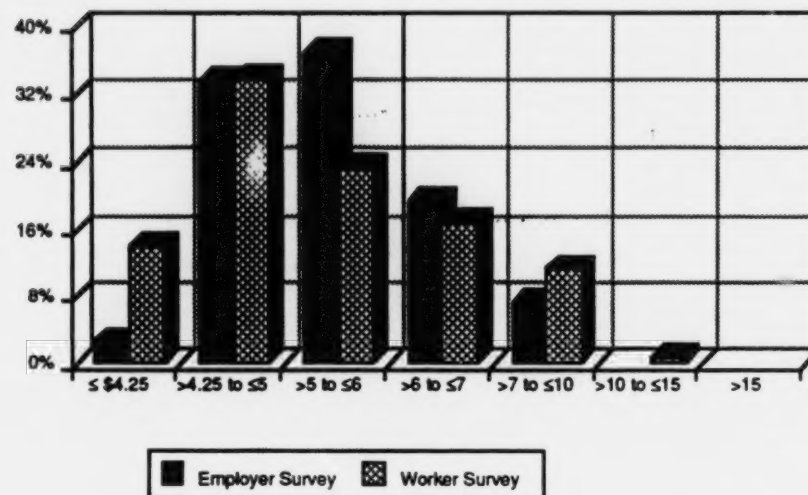


Figure 18
Field/Shipping Worker Wage Distributions From Employer and Worker Surveys

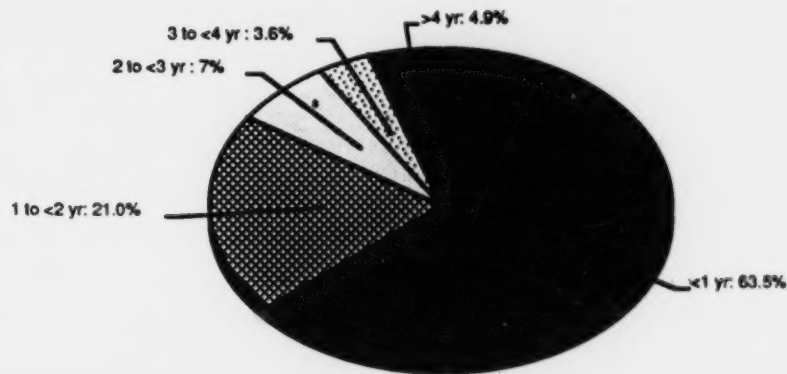


In reviewing the above three figures, it appears the differences between the two surveys occur in one or two intervals and not in a systematic way. For example, in the case of the foreman/crew leader the survey results are fairly close except in the six to seven dollar range and the ten to fifteen dollar range. This phenomenon occurs in both of the other two job classifications for various wage intervals. Generally speaking, foreman/crew leaders and technical workers reported receiving higher average earnings than reported by employers. On the other hand, the employers reported lower wages for the field/shipping workers than the workers said they received.

Last Raise

Over 60 percent of the workers reported receiving a raise in the last 12 months and 87 percent within the last 24 months. A raise was given an average of 13.2 months ago. This average period between raises is consistent across job classifications. With respect to gender, females received a raise on the average 10.4 months ago while males received one on the average 14 months ago. Figure 19 shows the percentage of how long ago raises were given to workers.

Figure 19
Time Last Raise Was Received by Workers



LANGUAGE SKILL LEVEL

Two languages were predominant among the workers. They were Spanish and English, with Spanish being the most prevalent by far.¹⁵ Information was collected on workers' skills in both English and Spanish. For English, the worker was asked to rate his/her speaking, reading and writing ability. For Spanish, the worker was asked to rate only his/her reading and writing ability. As can be seen from Table 5, most workers have some ability in Spanish but not so with English.

Table 5
Language Skills of Workers

	No	Yes	Ability		
			Little	Moderate	Well
All Workers					
Do you speak English?	38.0%	62.0%	65.8%	27.6%	6.6%
Can you read English?	41.8%	58.2%	54.9%	21.2%	23.9%
Can you write English?	58.2%	41.8%	51.1%	21.6%	27.4%
Can you read Spanish?	4.6%	95.4%	12.4%	31.3%	56.2%
Can you write Spanish?	6.4%	93.6%	12.7%	34.3%	53.1%

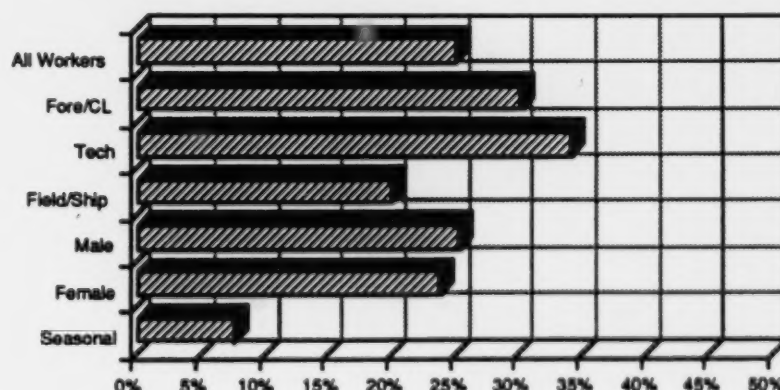
¹⁵Interviews for the workers' survey were conducted in both Spanish and English - 86 percent of the interviews were conducted in Spanish with 13 percent in English. One percent of the interviews used both languages.

The higher the job classification of workers, the better their English ability. While only half of the field/shipping workers can speak some English, nearly 95 percent of the foreman/crew leaders can speak it (slightly over 70 percent of the technical workers can speak English). This same relationship persists in reading and writing, but at a lower overall level. Seasonal workers have the least amount of language skills. Over 70 percent of seasonal workers cannot speak English or read English and nearly 90 percent are unable to write it. On the other hand, 95 percent of these seasonal workers can read Spanish (nearly half very well) and 90 percent can write the language...Spanish language skills are fairly constant across the different classification groups.

SAFETY/HEALTH

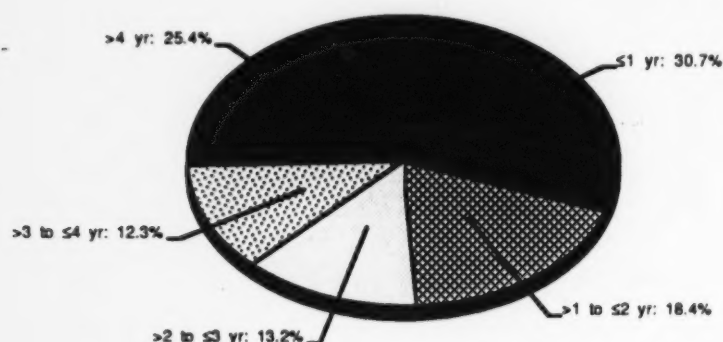
About one quarter of the workers reported that they had been injured on the job at some time. Figure 20 compares the incidence of injury among the different groups. Technical workers were most apt to injure themselves, with nearly 35 percent reporting that they had been injured. The field and shipping workers were the least likely job classification group to be injured. Reported injuries are roughly the same for males and females. Less than 10 percent of the seasonal workers reported being injured on the job.

Figure 20
Percent of Workers Injured on Job by Selected Groups



Of the workers who had been injured, nearly 50 percent had been injured in the last two years (See Figure 21 for details). For over one quarter of the workers, it had been over four years since an injury occurred.

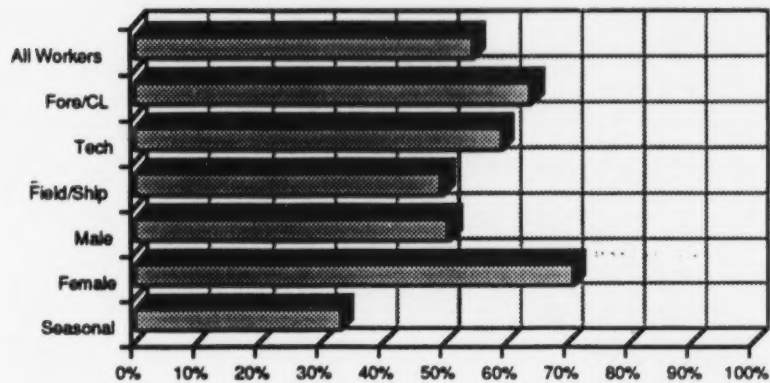
Figure 21
Percentage of Workers Injured/When Injury Occurred



Of those injured, approximately 65 percent were unable to work. This percentage holds across the different job classifications.

Workers were asked whether or not they had seen a doctor in the last year. Over 50 percent of the workers reported that they had seen a doctor in the last year. Figure 22 below shows the percentage of workers (by different groups) who reported seeing a doctor.

Figure 22
Percentage of Workers Who Have Seen A Doctor in the Last Year
by Selected Groups



Females were the most likely group to see a doctor, with 70 percent reporting a doctor visit in the last year. Seasonal workers were the least likely, with roughly 30 percent reporting seeing a doctor. Finally, the higher the skill group, the more likely that they would have seen a doctor in the last 12 months.

Section II

NURSERY INDUSTRY LABOR BASELINE

LABOR BASELINE

As in the preceding section, the Nursery Industry Labor Baseline was established by reviewing data collected from the 167 telephone interviews conducted in October 1991. This view of the California nursery industry looks at the nature of the surveyed firms, how they hire and pay their production/shipping employees and what skills are required of these employees. The major sections are as follows: Firm Profiles, Hiring Practices, Compensation and Skill Requirements.

FIRM PROFILES

Number of Years in Business

On average, the nurseries in this study have been in business for almost 30 years (mean = 28.9). The median length of time in business was 23 years. Businesses surveyed reported years in business ranging from 5 to more than 100.

Location

About two-thirds (65.9%) of the 167 firms responding to the initial telephone survey are located in the southern California counties of San Diego, Los Angeles, Ventura, Orange and Santa Barbara. About one-third (34.1%) of responding firms are located in the northern California counties of Monterey, Santa Cruz, Santa Clara, Alameda and San Mateo.¹⁶

Number of Employees

Firms were classified by employment size. Small firms, which represented 14 percent of the firms sampled, have fewer than ten employees. Medium size firms, just over two-thirds (67.1%) of the firms sampled, have between 10 and 99

¹⁶One of the firms surveyed with a reported address in Alameda County actually operates in Sacramento County. For the purposes of this study the firm was reported as operating in Alameda.

employees. Large firms, accounting for nearly one-fifth (18.6%) of the firms sampled, have 100 or more employees. (See Table 6.)

Table 6
Number and Employment Size of Nursery Firms by County¹⁷

County	1-9 Employees		10-99 Employees ¹⁸		100+ Employees		Total Firms	Total Employment
	Number of Firms	Number of Employees	Number of Firms	Number of Employees	Number of Firms	Number of Employees		
San Mateo	25	115	25	752	4	1,130	54	1,997
Monterey	25	145	56	1,140	3	400	84	1,685
Santa Cruz	46	178	*47	*1,332	N/A	N/A	93	1,510
Santa Clara	62	223	*25	*789	N/A	N/A	87	1,012
Alameda	17	60	*17	*784	N/A	N/A	34	844
Northern California	175	721	165	4,149	12	2,178	352	7,048
Los Angeles	58	242	70	2,142	10	2,729	138	5,113
San Diego	138	509	96	2,660	6	1,075	240	4,244
Orange	17	77	17	539	8	1,377	42	1,993
Ventura	32	160	*36	*1,665	N/A	N/A	68	1,825
Santa Barbara	30	148	*40	*1,372	N/A	N/A	70	1,520
Southern California	275	1,136	255	7,523	28	6,036	558	14,695
Survey Area	450	1,857	420	11,672	40	8,214	910	21,743
Statewide	619	2,533	548	15,295	70	14,663	1,285	32,491

Types of Nursery Stock Produced

Nursery stock production was divided into four broad areas: shade trees and shrubs, decorative plants and ground cover, food trees and plants and specialty crops. Respondents were asked to indicate by percentage how much of each of the four categories they grew, with totals equaling 100 percent. Table 7 presents the results of nursery production reported by the responding firms. The majority of nursery firms produce products that fall in the decorative plants and ground cover category.¹⁹

¹⁷This information was supplied by EDD for the year 1990 and was used to draw the sample points.

¹⁸Cells in this column marked with an "*" reflect all employers with ten or more employees. The numbers from the cells marked N/A were merged with the numbers in the cells marked with an "*". These adjustments were made to avoid revealing confidential data.

¹⁹Examples of the type of plants and crops included in each of the groups are contained in the telephone employer survey (Appendix B).

Table 7
Percentage Distribution of Nursery Firms' Products

Type of Nursery Stock Produced	Percent
Shade trees and shrubs	19.5%
Decorative plants and ground cover	71.8%
Food trees and plants	4.5%
Specialty crops	4.1%

Table 8 shows the percentage totals for northern and southern California in the four production categories. A large majority of southern California firms reported producing shade trees and shrubs (88.9 percent) and food trees and plants (71.4%), while the number of nurseries producing the other stock categories was more evenly divided.

Table 8
Distribution of Nursery Products
Between Northern and Southern California

Type of Nursery Stock Produced	Northern California	Southern California
Shade trees and shrubs	11.1%	88.9%
Decorative plants and ground cover	40.5%	59.5%
Food trees and plants	28.6%	71.4%
Specialty crops	42.9%	57.1%

While many of the contacted nurseries grew a combination of these stock types, some of the nurseries grew either all of one stock category or grew none of certain categories. For instance, two-thirds (66.3%) of the respondents reported growing only decorative plants and ground cover, while 19.9 percent of the respondents grew none of those crops at all. Table 9 shows percentages, by crop, of nurseries that grow either only that crop or none of that crop.

Table 9
Percent of Firms Growing All or None of Nursery Stock Group

Type of Nursery Stock Produced	Percent Growing This Stock Only	Percent Growing None of This Stock
Shade trees and shrubs	12.0%	76.5%
Decorative plants and ground cover	66.3%	19.9%
Food trees and plants	2.4%	91.0%
Specialty crops	3.6%	95.2%

Nursery Acreages

Of the 163 firms that provided acreage information, 59.5 percent reported nurseries of 20 or fewer acres; 40.5 percent reported nurseries of greater than 20 acres. While the nurseries ranged in size from less than one acre to more than 1000 acres, the median size was 17 acres. Over 40 percent (41.4%) of the nurseries had more than one production site managed from the main office.

It was anticipated that some of the more urban counties would show very high concentrations of small-acreage nurseries. However, the data show no particular concentrations of either large or small acreage nurseries in any one county, or in either region (north or south).

Production Square Footage Under Cover

Nearly 95 percent of the firms reported having some amount of production square footage under cover (i.e., greenhouses, plastic). (See Table 10.) Nearly 40 percent (39.9%) of the firms had 50,000 square feet or less of production under cover. (43,560 square feet are in an acre.) Almost one-fourth (24.1%) of the nurseries had covered production areas ranging from 300,000 square feet to well over 3 million square feet.

Table 10
Distribution of Firms' Under Cover Square Footage

<u>Amount of Square Footage Under Cover</u>	<u>Percent</u>
0 - 50,000	39.9%
50,001 - 100,000	13.9%
100,001 - 300,000	22.2%
300,001 +	24.1%

The use of covered production areas appears limited almost exclusively to the growers of decorative plants and ground cover (76.6%) and shade trees and shrubs (22.8%). Less than ten percent of the food trees and plants and specialty crop growers reported using covered production areas.

1991 Estimated Gross Sales

Estimated gross sales reported for 1991 range from under \$100,000 to more than \$10,000,000. More than half (51.4%) of the 148 respondents to this question had

1991 estimated gross sales under \$1,000,000. Around one-third (34.5%) of the firms reported estimated gross sales for 1991 from \$1,000,000 to \$5,000,000.

Table 11 shows the various nursery sizes by acreage against 1991 estimated gross sales levels. As was expected, more of the smaller nurseries report lower sales levels than higher sales, while more of the larger nurseries report higher sales levels than lower sales. Also expected was the correlation between labor force size and gross sales levels: almost all of the nurseries earning less than \$1,000,000 have fewer than 25 production employees, while almost all of the nurseries earning more than \$5,000,000 have more than 60 production employees. An anticipated pattern of significant differences in gross sales due to geographic location and/or types of stock production did not materialize.

Table 11
Comparison of Gross Sales and Nursery Acreage

Total Acreage of Nursery	Total Estimated Gross Sales			
	0 to \$500K	\$500 to \$1M	\$1M to \$5M	\$5M or more
0 to 10	51.9%	25.9%	20.4%	1.8%
11 to 20	20.0%	28.6%	48.6%	2.8%
21 to 50	17.4%	26.1%	39.1%	17.4%
50 or more	3.1%	9.4%	40.6%	46.9%

Nursery Association Memberships

Nearly 85 percent (84.3%) of respondents indicated they held memberships in one or more grower associations. Forty-four percent (44.3%) belong to the California Association of Nurserymen. Almost 40 percent (37.1%) belong to various flower associations and 36.4% belong to other grower and landscape associations. Multiple memberships were reported by some respondents.

The main reasons given for membership in these organizations include the following: information, research and education (71.4%), representation for legislation (38.6%), and marketing and public relations (25%). Around two-thirds (66.5%) of the memberships are held by nurseries in the southern part of the state and about one-third (32.3%) of the memberships are held by northern members.

HIRING PRACTICES

This section addresses hiring practices and standards, labor force requirements, and other information basic to the hiring practices of the surveyed nurseries. The approach of this study was to concentrate on employees involved in crop production: the production/shipping workers. Thus, once some basic data on labor force size and other general issues are presented, the discussion focuses on more specific data for the three categories of production employees.

Labor Force Size: Individual Nursery

Respondents were asked how many workers they employed in two categories: production and management. The production employees include field/shipping employees, foremen/crew leaders and technical employees. The management employees include all management, administrative, sales and customer service positions. On average, the nurseries employed nearly five production employees for every management worker. The median individual labor force size for the two categories showed approximately the same ratio. (See Table 12.)

Table 12
Average Number of Production and Management Employees

Employment Category	Average Number of Employees	Median Number of Employees
Production	48.8	18
Management	10.0	4

Labor Force Size: All Respondents

The nurseries in this study currently have over 8,400 production employees. Table 13 shows the number of permanent, seasonal, full-time and part-time employees currently working in production jobs. The table also shows the number of employees expected in those categories at the busiest time of year.

Table 13
Employment Status of Surveyed Firms
Current and During Busiest Time

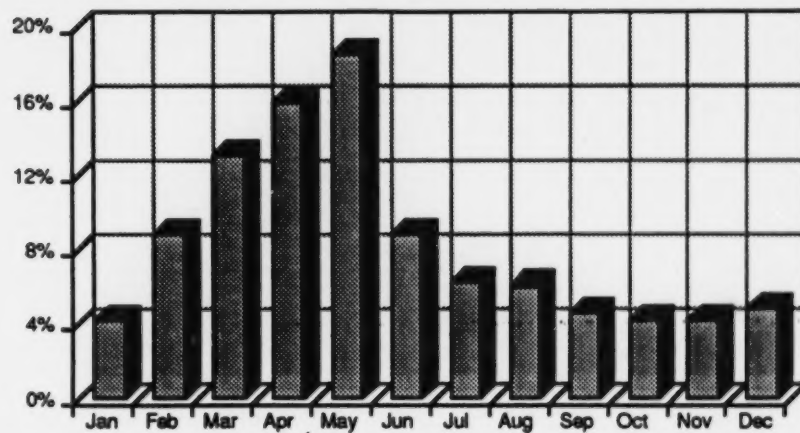
Employment Status	Permanent	Seasonal	Total
Current full-time	7,213	723	7,936
Current part-time	170	18	188
Total	7,383	741	8,124
Busiest full-time	7,213	2,529	9,742
Busiest part-time	170	126	296
Total	7,383	2,655	10,038

The nurseries expect to increase labor force size by about one-fifth (19.2%) for the peak period. The main increase will be the addition of over 1,500 seasonal full-time production employees. The use of part-time positions in the industry is quite small relative to the total labor force. For example, although 18 percent (18.2%) of the nurseries reported that they currently employed some permanent part-time production employees, those 170 permanent part-time jobs represented just 2.3 percent of the total permanent labor force size represented by the surveyed nurseries. Similarly, seasonal part-time workers as a percent of current seasonal labor force size is just 2.4 percent. Even at the busiest period, seasonal part-time work only goes up to around 5 percent (4.7%) of the total seasonal labor force.

Seasonal Employment Patterns

In general, March, April and May were cited as the busiest months by survey respondents. This same pattern was observed along crop lines and along acreage sizes; while other months may vary, these three were consistently rated "busiest of the busy". Figure 23 shows the percentage of nurseries that considered each month as the busiest time. (Multiple responses to this question were given.)

Figure 23
Busiest Months of the Year For Firms



On average, firms increased their permanent production jobs by three and their seasonal production jobs by ten during their busiest period. Management positions only increased by half a job (.5) on average for the busiest period.

When employers were asked about labor supply, only about 15 percent (15.6%) of the firms said they did not have plenty of labor available to meet their needs throughout the year. The same peak periods of March, April and May were the months most frequently cited by these employers as the time of year it is hardest to find production employees.

Current Production Worker Labor Force Size

Respondents were asked how many workers in each of the three production categories they currently employed. They were also asked how many they had hired during the past year and the number of internal hires that qualified as in-house promotions. These data are arranged by employment category in Table 14, which presents a summary of the current production worker labor force size data.

Table 14
Current Production Worker Labor Force

Employment Category	Average Number Currently Employed	Average Number Hired During Past Year	Average Number Promoted In-House
Foreman/Crew Leader	5	0.1	0.7
Technical	7	0.2	0.4
Field/shipping	38	15.0	0.0

Current Field/shipping Labor Force Size

The number of field/shipping production workers currently employed by responding nurseries ranges from 0 to over 450. The average number of field/shipping workers is currently 38. The median number of field/shipping employees is 14. On average, 15 field/shipping employees were hired per firm during the last year. The median number of field/shipping workers hired per firm during the last year is 2.

Current Foreman/crew leader Labor Force Size

The number of foreman/crew leader production workers currently employed by responding nurseries ranges from 0 to 60. The average number of foreman/crew leader workers is currently 5. The median number of foreman/crew leader employees is 2. Fewer than 8 percent of respondents hired foreman/crew leader employees during the last year. About one-third (31.9%) of responding nurseries reported at least one in-house promotion into this position. The number of in-house promotional hires for foreman/crew leader positions ranged from 1 to 8.

Current Technical Labor Force Size

The number of technical production workers currently employed by responding nurseries ranges from 0 to over 90. The average number of technical workers is currently 7. The median number of technical employees is 2. Fewer than 9 percent (8.7%) of respondents hired technical employees during the last year. One in eight (12.4%) responding nurseries reported at least one in-house promotion into this position. The number of in-house promotional hires for technical positions ranged from 1 to 20.

Average Length of Employment

The current average length of employment for production employees ranges from five to ten years, depending on whether the employees are field/shipping (5.7 years), foreman/crew leader (9.8 years), or technical workers (6.8 years). The number of years on the job for current production employees range from less than one year to more than 15 years for each of these categories.

More than half (52.2%) of the responding employers said that the average length of employment for these jobs has increased in the past few years. When asked why, 49.1 percent cited a better work environment, while over one-fourth (27.6%) recognized a steadier, better qualified labor force as the reason. Almost half (47.8%) of the respondents said that the length of employment has not increased recently.

Recruitment

Various methods of recruitment that employers use to find production workers are shown in Table 15. Word of mouth is used extensively to locate field/shipping workers and technical workers. Other employees also serve as a valuable resource in finding needed employees. As mentioned previously, a significant number of foreman/crew leader and technical positions are filled internally via in-house promotions.

Table 15
Recruitment Methods Used by Employers

Method of Recruitment	Foreman/Crew Leader	Technical	Field/Shipping
Word of mouth	17.4%	48.5%	68.9%
Worker, foreman	3.6%	9.1%	37.7%
Advertise	10.8%	10.1%	5.2%
Promote from within	48.5%	26.3%	-
EDD/other government	1.2%	4.0%	4.8%
Farm labor contractor	-	-	2.4%

Ten percent of respondents said they used the services of farm labor contractors on a regular basis, while 90 percent said they did not. About one in five farms (22.2%) said they have used EDD assistance in finding needed employees.

Almost all (94.0%) of the employers responding stated that there is no union representation among their production workers. Similarly, 92 percent do not expect unionization to occur within the next two years.

Languages

Spanish is the primary language used by over 70 percent of surveyed production workers. 55 percent to 65 percent of them use English as a secondary language. Spanish is also the language most typically used to communicate instructions to the employees. Table 16 shows the percentages of language use among the production jobs. About one-fourth (24.8%) of employers said they had language communication problems with their production employees.

Table 16
Language Use Among Production Jobs

<u>Job Classification</u>	<u>Primary Language</u>	<u>Secondary Language</u>	<u>Language Used for Instruction</u>
Foreman/crew leader	Spanish - 75%	English - 65%	English - 50% Spanish - 32%
Technical	Spanish - 73%	English - 59%	Spanish - 59%
Field/shipping	Spanish - 87%	English - 57%	Spanish - 76%

Educational Level

Employers were asked whether they had a minimum educational level for production workers. Fewer than three percent (2.4%) of respondents said there was a minimum educational level for field workers; that level was second grade. Seven percent (7.1%) of employers said there was a minimum educational level for shipping workers; that level was 12th grade.

Fourteen percent of the respondents said there was a minimum educational level for foreman/crew leader positions; that level most typically was 12th grade, although some employers accepted 6th grade, technical training, or experience equivalents. About one-fourth (27.1%) of employers indicated a minimum educational level for technical workers; that level was most typically 12th grade or technical training, with some employers accepting 8th grade educational level or experience equivalents.

Training Requirements

Almost two-thirds (61.2%) of surveyed employers said their field/shipping employees needed on-the-job training for one month or less. About one-third (30.5%) of the employers said field/shipping employees needed such training either on a continuous basis or for more than one month. Just over half (54.5%) of the respondents preferred continuous or more than one month's training for their foreman/crew leader employees. About one-third (34.7%) of responding employers preferred continuous or more than one month's training for their technical employees.

Safety Training

Approximately 86 percent (86.2%) of respondents reported that their employees attend regularly scheduled safety meetings, while 13.8 percent said their employees do not. Among the nurseries that do have regular safety meetings, almost two-thirds (62.8%) hold these meetings at least monthly. About one-third (37.3%) of the nurseries reported holding safety meetings from one to four times per year. Over 80 percent of the meetings are sponsored and conducted by in-house staff.

General Skill Requirements

Respondents were asked what type of skills each of the three categories of production workers must have. This discussion on general skill requirements concerns itself with this open-ended question, asked during the first interview. (In the follow-up interviews conducted on-site, employers were asked to rate a specific set of skills. Discussion of these skill-rating results may be found in the Skill Requirements section of this report.)

Only one skill was mentioned by more than half of the respondents in this open-ended question. Almost two-thirds (62.3%) of the employers said that foreman/crew leader employees must have management skills. Only three skills were mentioned for all three categories of production employees: basic math, the ability to read and basic knowledge of plants. The skill requirements offered by respondents to the open-ended question are listed below, arranged by employment category. The skills are listed in order according to the percent of employers who mentioned them. Only skills that were mentioned by at least ten percent of the respondents are listed.

General Skill Requirements for Foreman/Crew Leaders

The skills that foreman/crew leaders must have, according to the surveyed nurseries, are listed in Table 17. The percent of respondents selecting each skill is shown in the second column.

Table 17
Desired Skills for Foreman/Crew Leaders

Type of Skill Desired	Percent of Employers
Management skills	62.3%
Basic knowledge of plants	22.2%
Read	21.6%
Bilingual	21.6%
Basic Math	21.6%
Get along with people	16.2%
Experienced	13.8%
Good attitude	10.2%

General Skill Requirements for Technical Employees

The skills that technical employees must have, according to the surveyed nurseries, are listed in Table 18. The percent of respondents selecting each skill is shown in the second column.

Table 18
Desired Skills for Technical Workers

Type of Skill Desired	Percent of Employers
Propagation skills	26.9%
Willingness to be trained	18.6%
Read	15.6%
Safety awareness	13.8%
Know how to prune	13.8%
Have degree, certificate, or license	12.0%
Basic math	12.0%
Basic knowledge of plants	10.2%

General Skill Requirements for Field/Shipping Employees

The skills that field/shipping employees must have, according to the surveyed nurseries, are listed in Table 19. The percent of respondents selecting each skill is shown in the second column.

Table 19
Desired Skills for Field/Shipping Workers

<u>Type of Skill Desired</u>	<u>Percent of Employers</u>
Follow instructions	37.7%
Manual dexterity	31.7%
Basic math	28.1%
Willingness to be trained	25.1%
Good attitude	24.0%
Read	22.8%
Write	18.0%
Drive car/truck	12.6%

Almost 17 percent of respondents (16.8%) said none of the skills listed in this section were difficult to find in the labor force. However, another 17 percent (16.8%) said that management skills were the most difficult to find among labor force participants. Another 10 percent said employees with good attitudes were hard to find.

COMPENSATION

This section of the Nursery Industry Labor Baseline reports on compensation issues for the three categories of production workers. Methods of compensation, prevailing wages, and bonuses and benefits are presented, along with a discussion of how wage rates and methods of payment are determined.

Almost all respondents (91.6%) said they pay production employees by the hour. A few respondents (8.4%) said they pay both by the hour and by the piece.

More than half of the surveyed employers say they use the minimum wage (\$4.25/hour) or just slightly above as a starting salary for their newly hired production employees. About one-fifth (20.4%) of the employers base their new hire starting wages on what they feel is the current market, or industry average wage. The employers' ability to determine this wage is based on experience and what they see occurring in the local labor market. About 14 percent take the new employee's background and experience into account. Other methods of initial

salary determination that were mentioned include union negotiations, performance-based criteria and what is available in the company budget.

Wage Data

Wage data for production workers were collected for new hires without experience, new hires with experience and current average wages. Table 20 shows the wage data for each of the production categories by presenting the average or mean wage, the most frequently occurring or modal wage in parentheses and the wage range on the second line. This wage information, as mentioned earlier, is based on the recollection of employers.

Table 20
Hourly Wages as Reported by Employers by Job Classification

<u>Job Classification</u>	<u>New Hires No Experience</u>	<u>New Hires with Experience</u>	<u>Current Average Wage</u>
Foreman/crew leader wage range	\$6.06 (4.25) 4.25 - 13.00	\$7.33 (6.00) 4.25 - 18.75	\$8.68 (7.00) 4.65 - 18.65
Technical wage range	\$5.20 (4.25) 4.25 - 13.00	\$6.09 (4.25) 4.25 - 9.50	\$7.11 (6.00) 4.25 - 17.00
Field/shipping wage range	\$4.56 (4.25) 4.25 - 7.00	\$5.06 (4.25) 4.25 - 15.65	\$5.72 (5.00) 4.25 - 10.00

Two-thirds of responding employers said their wages were average for the industry. About one-fourth (27.9%) said the wages they paid were high for the industry, while a few (6.1%) said they paid wages that were low for the nursery industry.

Almost three-fourths (71.7%) said they grant annual wage increases; 28.3 percent said they did not. The employers who do grant annual wage increases estimated an average five to seven percent increase. The amounts of annual wage increases ranged from less than one percent to 20 percent.

Over half (59.4%) of the respondents reported that annual bonuses could be earned. The average bonus earned last year was \$275.00; the median bonus was \$200.00. The bonuses ranged from \$25.00 to \$2,000.00.

Three-fourths (77.4%) of the responding firms said they offer benefits to their full-time employees. Only 8 percent offer benefits to part-time employees and only 16.9 percent offer benefits to their seasonal employees.

SKILL REQUIREMENTS

The following discussion on skill requirements presents data that were collected during the second round of employer interviews, the on-site surveys. Eighty-five of the original 167 nursery industry employers participated in these surveys. They were asked how important each of a set of skills were for four categories of production jobs: field employees, shipping employees²⁰, foreman/crew leader employees and technical employees. Table 21 is a list of all the skills that employers were asked to rate.

Table 21
List of Skills Employers Were Asked to Rate

- Oral communication skills
- Bilingual ability
- Ability to write legibly
- Ability to perform basic math computations
- Ability to read and follow instructions
- Willingness to work with close supervision
- Ability to work independently
- Ability to use a computer terminal
- Knowledge of horticulture
- Knowledge of pesticides and herbicides
- Pruning skills
- Knowledge of gardening tools
- Knowledge of sales techniques
- Public contact skills
- Valid driver's license
- Good driving record
- Ability to lift at least 100 pounds
- Ability to operate machinery
- Ability to delegate work (asked only for foreman/crew leader)
- Ability to schedule work load (asked only for foreman/crew leader)

²⁰In the area of skill requirements, the field/shipping category was separated into field employees and shipping employees. It was felt that the skill requirements for these two activities would have some differences.

Respondents were asked to rate the skills as to whether they were required for the position, nice to have for the position, or not needed for the position. The results of these ratings are presented here in tabular form according to job category. Skills that were rated alike by more than 50 percent of the respondents are presented in these tables (Tables 22 - 25), one for each occupation. For complete ratings data on each skill and each job category, see Appendix B, Employer Field Survey questionnaire.

Table 22
Foreman/Crew Leader Skills Table

Skills Rated by More Than 50 percent of Employers As:	Skills
Required	Oral communication skills Bilingual ability Ability to write legibly Ability to perform basic math computations Ability to read and follow instructions Willingness to work with close supervision Ability to work independently Knowledge of horticulture Knowledge of gardening tools Valid driving license Good driving record Ability to operate machinery Ability to delegate work Ability to schedule work load
Nice to Have	Ability to lift at least 100 pounds
Not Needed	Ability to use computer terminal

Skills that were reported as "required" by 25 to 50 percent of surveyed employers include: knowledge of pesticides and herbicides, pruning skills and public contact skills.

Table 23
Technical Worker Skills Table

Skills Rated by More Than 50 percent of Employers As:	Skills
Required	Oral communication skills Ability to write legibly Ability to perform basic math computations Ability to read and follow instructions Willingness to work with close supervision Ability to work independently Knowledge of pesticides and herbicides
Nice to Have	Bilingual ability
Not Needed	Ability to use computer terminal Knowledge of sales techniques

Skills that were reported as "required" by 25 to 50 percent of surveyed employers include: bilingual ability, knowledge of horticulture, knowledge of gardening tools, valid driver's license, good driving record and ability to operate machinery.

Table 24
Shipping Worker Skills Table

Skills Rated by More Than 50 percent of Employers As:	Skills
Required	Oral communication skills Ability to write legibly Ability to perform basic math computations Ability to read and follow instructions Willingness to work with close supervision Ability to work independently
Nice to Have	Bilingual ability Knowledge of horticulture Public contact skills Ability to operate machinery
Not Needed	Ability to use computer terminal Pruning skills

Skills that were reported as "required" by 25 to 50 percent of surveyed employers include: valid driver's license, good driving record and ability to operate machinery.

Table 25
Field Worker Skills Table

Skills Rated by More Than 50 percent of Employers As:	Skills
Required	Willingness to work with close supervision
Nice to Have	Oral communication skills Bilingual ability Ability to write legibly Ability to perform basic math computations Ability to read and follow instructions Ability to work independently Knowledge of horticulture Knowledge of pesticides and herbicides Valid driver's license Ability to operate machinery
Not Needed	Ability to use computer terminal Knowledge of sales techniques Public contact skills

Skills that were reported as "required" by 25 to 50 percent of surveyed employers include: oral communication skills, ability to work independently and knowledge of gardening tools.

Summary of Skill Requirements for California Nursery Workers

Taking the results of both sets of skills questions that were asked of employers, some conclusions may be drawn about skills that are generally required by California nursery industry employers. The field and shipping employees need to be able to read and write, do basic math, follow instructions and be willing to work with close supervision. The technical employees must have all of those skills and also possess safety awareness and a knowledge of horticulture. The foreman/crew leader employees must have all of these skills, be bilingual (Spanish) and have the ability to schedule work loads and delegate work.

Section III

NURSERY EMPLOYERS' INDUSTRY OUTLOOK

INDUSTRY OUTLOOK

Participants in this study of the California nursery industry were asked to share their opinions about the future, both in terms of their own businesses and in terms of the industry as a whole. This section presents those findings.

Outlook for Individual Businesses

Respondents were asked what the outlook for their business was (excellent, good, fair or poor) for this year, next year and in three years. About two-thirds (67%) of respondents said the outlook for their business this year was fair to good. About one-fourth (27.5%) said poor and a few (5.4%) said excellent. For next year, about three-fourths (73.6%) of the respondents said the outlook for their business was fair to good. Only 16.6 percent answered poor, while those answering excellent grew to 9.8 percent. For the three-year outlook, 72.4 percent said the outlook for their business was fair to good. Fifteen percent (15.2%) said their three-year outlook was poor; 12.4 percent said it was excellent. (About ten percent of respondents declined to answer the question about a three-year outlook.)

Table 26 shows the modal response(s) by county for each of the three outlook periods. As a whole, members of the nursery industry expect some improvement in the outlook for their businesses over a three-year horizon. The five southern counties report a somewhat brighter outlook than do the northern counties.

Table 26
Outlook for Nursery Industry by Surveyed County

County	Outlook for This Year	Outlook for Next Year	Three-Year Outlook
Los Angeles	poor, fair	poor, fair	good
Orange	poor, good	good	good
San Diego	good	good	good
Santa Barbara	good	good	good
Ventura	poor, fair, good	good	good
Alameda	fair	fair	fair
Monterey	fair	fair	fair
San Mateo	fair	fair, good	good
Santa Clara	poor, fair	fair	poor, good
Santa Cruz	poor	poor	fair

Nearly one-third (31.9%) of the nursery firms indicated that they have plans for expansion. The timing of the planned expansions was fairly evenly divided over the following time frames: expansion within six months (20.8%), expansion within one year (22.9%), expansion within three years (29.2%) and expansion after three years (27.1%). Expansion plans were also fairly evenly divided among counties, ranging from a high of around 40 percent of nursery firms in Santa Clara, Orange and San Diego counties to a low of around 16 percent of nursery firms in Santa Cruz, San Mateo and Ventura counties.

Over half of the respondents (54%) expect to see their product mix change in the future. About one-third of these (31.3%) said they would be more responsive to demand. About one-fourth of them (27.5%) said they planned more diversification and 23.8% said they planned to offer more drought-resistant products. Two-thirds of the respondents do not expect any significant shortages of labor in the future. Almost 20 percent of the firms expect a surplus of labor to exist. Among nurseries expecting shortages, most thought it would be in the skilled labor category.

Factors Influencing Nursery Industry

Employers were asked about three factors that had or are expected to have significant impact on the California nursery industry: urbanization, drought and competition. Those findings are presented here.

Urbanization

Respondents were asked what impact urbanization (encroachment of cities and development upon open and agricultural lands) has had on their businesses in the following areas: land, regulations, spraying, water and other. In terms of land, over half of the respondents (53.9%) said there had been no impact. Over 20 percent (21.6%) said there was less land available and 15.6% said that the price of land had increased due to urbanization. These effects were shared equally among southern and northern firms, and among nurseries of all sizes.

Regarding regulations, almost half (49%) said there had been no impact. About one-third (33.1%) said there were too many regulations and restrictions, and 10.6% said there was more compliance paperwork because of urbanization. Compliance paperwork deals with record keeping and reporting requirements imposed on the company.

In terms of spraying, 43.1 percent said there had been no impact due to urbanization. About one-fourth (24.2%) said urbanization had caused too many regulations on spraying activities and 7.9% said this had increased their cost of doing business.

In the area of water, 45.5% said there had been no impact from urbanization. Eighteen percent (18.6%) said they have their own wells, but another 15 percent said they have had to cut back on crop production due to water restrictions. Ten percent (10.2%) said this has increased their costs.

According to employers, other ways urbanization has affected nursery businesses include, increased vandalism (19.4%), too much traffic (16.1%) and a decrease in sales. However, 41.9% of respondents said urbanization had brought an increase in sales.

Respondents were also asked how urbanization would affect their business within the next three years. Over one-third (38.3%) said they did not anticipate any effect; 16 percent (16.2%) expected sales increases. However, 13 percent (13.2%) said they would be forced out of business. Other effects mentioned by respondents included: less land available, cost increase for land, property

values would increase, too many regulations, increased cost of doing business and more paperwork.

Drought

Over half of the nurseries contacted (52.1%) said the drought has had the effect of decreasing sales at their companies. Almost half (44.9%) said the drought has had an effect on their firm's production level and product mix. Among these, 42.5% said the effect was a decrease in production. About one-fourth (24%) said they were offering more products and 6.7 percent said they were more diversified as a result. The impact of drought on labor force size is discussed in the labor outlook section.

Competition

Respondents were asked what impact large and small competitors have on how they operate their business now. Large competitors were viewed as a source of price competition by 34.1 percent of respondents. Fifteen percent said that products from foreign suppliers represented their biggest competitor. Over 40 percent (41.3%) said that large competitors had no impact on their businesses. Small competitors were viewed as a source of price competition by 14 percent of respondents. Over three-fourths (80.6%) said that small competitors had no impact on their businesses.

When asked about the future, over half (52.9%) said they did not expect any impact from competition in the future. Twenty percent said they expected price competition to affect their future business and 11.4 percent said that imports would continue to be a problem.

Problems Currently Facing the California Nursery Industry

Employers were asked to identify the single greatest threat to their businesses. Over one-fourth (26.9%) of the firms identified imports as their greatest concern. Water and the drought ranked second, with 21.2% of firms mentioning them. Other threats to business included the weak economy (14.1%) and increased regulations (14.1%).

Respondents were also asked to identify three problems facing the California nursery industry. The most frequently mentioned problems were water/drought

(47.3%), regulations (43.7%) and imports (34.7%). Other concerns mentioned include workers' compensation insurance (15.6%), labor costs (13.8%), the economy (13.8%) and urbanization (12%).

When asked what state government could do to improve the outlook for the California nursery industry, nearly half (48.5%) of the respondents said reduce regulations, e.g., spraying regulations, water regulations, employee regulations. Other suggestions included reducing imports (18%), providing more government support (14.4%), cutting the cost of workers' compensation insurance (9%) and ensuring an adequate water supply (7.8%).

LABOR OUTLOOK

The California nursery industry enjoys a generally stable labor force in terms of supply and demand. In the past few years the industry has experienced some factors that have the potential to affect typical supply and demand patterns in the California nursery industry labor force. These factors are addressed in this section of the report.

Factors Affecting Labor Force Size

Regarding direct effects on hiring and employment levels, three areas were the focus of research: the 1986 Immigration Reform and Control Act, the five-year long drought and the trend toward increased mechanization.

Immigration Reform and Control Act (IRCA)

About 40 percent (43.3%) of the surveyed nursery firms said that the Immigration Reform and Control Act (IRCA) has had an impact on their operations. When asked how IRCA had affected their businesses, 43.7 percent said the paperwork alone had a great impact because it is confusing and time consuming to complete, and there can be substantial fines for non-compliance. About 17 percent (16.9%) said that IRCA implementation increased turnover, therefore increasing labor costs. However, 20 percent (19.7%) of employers said IRCA contributed to less turnover because employees could stay on the job longer. Additionally, approximately a fifth (21.1%) of the employers said they were now able to hire legally under IRCA.

Drought

About one-third (34.1%) of surveyed employers said the drought had an effect on their hiring and overall employment levels this year. Nearly all of these respondents (94%) said that the effect was a decrease in employment. A few firms experienced an increase in hiring and a few experienced a decrease in production due to the drought.

Mechanization

Almost two-thirds (61.8%) of employers expect the future to bring increased mechanization to the nursery industry. Mechanization refers to production systems which require relatively more equipment than labor, i.e., irrigation systems, potting and planting equipment. However, no definition for mechanization was given during the interview. The results are mixed as to whether this trend will reduce or increase labor needs. About half (52%) said they expected that labor needs would be reduced as a result of increasing mechanization. About one-fifth (21.6%) of the employers stated that they expected to see an increase in needs for skilled labor.

Expectations for Labor Force Size

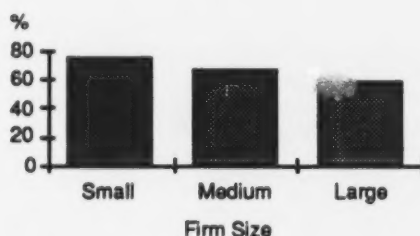
Respondents were asked how many production employees they expected to have next year. On average, the employers' answers reflected an increase in their permanent work force of two workers and no gain or loss in the size of their work force during their busiest period. Employers who did anticipate a change in work force size cited the weather or economic factors as contributing to the change.

Respondents were also asked whether they expected any significant labor shortages or surpluses in the future. It was found that 18 percent of responding employers expect a future labor surplus while 12 percent expect a labor shortage. Another 18 percent expect a short supply of certain work skills, workers with technical backgrounds and more knowledgeable workers.

EDD and the Nursery Industry

Firms in the nursery industry are well aware of EDD and not just from its function as a collecting agency for employer and employee taxes. Over two-thirds (69.8%) of the firms said that they were aware of the services EDD offered. When considering firm size, the awareness of the firms is inversely proportional to their size: the smaller the size, the greater the awareness (See Figure 24). This result could be accounted for by the fact that the smaller firms are in need of outside resources, whereas larger firms may have those resources in-house.

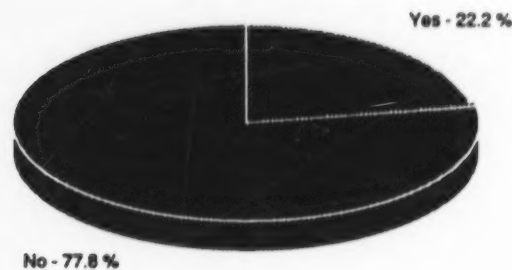
Figure 24
Percent of Firms Aware That EDD Offered Employment Services



When asked about whether or not they (the firm) ever used EDD services, 22.2 percent answered yes (see Figure 25). While the large firms on the whole were less aware of EDD's employment services, those large firms which are aware are more likely to use the services. Roughly 35 percent of the large firms at some time used EDD, while 25 percent of the small and 18 percent of the medium size firms said that they used EDD in the past.

Of the firms which have used EDD, nearly 60 percent (58.1%) used the services to fill labor or field/production openings. About a third (32.3%) of the firms used EDD to hire technical type workers while less than 10 percent (9.7%) used the services to fill office openings. In terms of when the services were used, almost

Figure 25
Percent of Firms Which Have Used EDD Services



half (46.7%) used EDD during the spring months. (The response rate to this questions was low.) In finding workers, the most prevalent manner is word of mouth or promotion from within. Field/shipping workers (69%) and technical workers (48%) are found mostly by word of mouth. Roughly 4 percent of the firms use EDD in hiring these types of workers. The foreman/crew leaders (48%) are most commonly promoted from within the firms' current work force. Less than 2 percent of the firms used EDD to fill these types of positions.

Employers are split about half and half as to whether or not they were satisfied with the workers supplied by EDD. Large firms appear the most satisfied with EDD workers (77.8%) while medium size firms are the most dissatisfied (68.4%).

In summary, the above information illustrates an industry which is aware of EDD as an additional resource to meet its labor needs. The majority of firms which did not use EDD were still aware that it furnished such services. However, the use of EDD in this capacity is small. The composition of the labor market for the nursery industry does not readily lend itself to outside services. This is underscored by the fact that only 10 percent of the firms use the services of a farm labor contractor.

Section IV

CONCLUDING REMARKS

This report has presented the first detailed look at the California nursery industry and its workers. The information collected from both employers and workers will serve as a benchmark. Employers in the industry are faced with many of the problems that exist in the economy as a whole. The diversity of opinions concerning the future of the industry as well as the evaluation of current trends is underscored by many of the findings in this study. Employers see markets eroding by foreign products, increasing costs to do business and continued government interference; they do not see areas where markets are expanding. The strategy for survival is to try to hold your own and not lose ground. The uncertainty of the economic environment only underscores the feelings of the employers.

The issue of imports surfaced three times during the employer interview process: first, when employers were asked to identify competitor impacts (15% said imports), second, when asked what the state could do to improve the outlook of the industry (18% said reduce imports) and third, when asked to identify their biggest problems (35% said imports) or threat to the industry (27% said imports). It appears that employers consider foreign products to be more of a threat to the industry as a whole than they do to themselves as an individual firm.

The dualism with which the employer sees foreign products characterizes how the employer sees government. At the firm level, the employer only sees the government as an entity which imposes its will on them, resulting in laws and regulations which make it more difficult for them to compete in the marketplace. The smaller the firm, the greater the impact. But at the industry level, employers still see the government as an entity which can solve the big problems such as foreign products or the economy, areas where the state government probably has little control.

However, in the face of this uncertainty, the nursery industry does have a strong and viable labor force which is its greatest asset. The industry is very labor-intensive and will remain that way for the foreseeable future. Workers begin at a highly unskilled level and are given the opportunity to become skilled workers. The greatest hindrance for workers is their lack of basic communication skills. It would appear that workers and employers would benefit if these skills were made part of training for entry level workers in the California nursery industry.

APPENDIX A
SURVEY METHODOLOGY

Sampling Design
Survey Design
Statement of Statistical Reliability

APPENDIX A

Appendix A details the sampling design, the survey design and statistical reliability statement. The sampling design describes the procedures to be followed in drawing a representative sample of nursery firms and workers, while the survey design addresses the mechanics of collecting the data. The statement of statistical reliability specifies the degree of reliability which can be associated with the data.

SAMPLING DESIGN / SURVEY DESIGN

Information supplied by EDD for 1990 showed the nursery industry to be comprised of 1,237 firms and 32,491 workers. While 46 of California's 58 counties had at least one nursery firm, the sampling universe was limited to ten counties. Collectively, these ten counties account for almost three quarters of the total number of firms and workers in the industry. The counties were grouped into southern California and northern California regions. Table A1 shows the counties included in the survey. The sample frame was made of 944 firms.

Table A1
Counties to be Surveyed

<u>Southern California</u>	<u>Northern California</u>
San Diego	Monterey
Orange	Santa Clara
Los Angeles	Santa Cruz
Ventura	San Mateo
Santa Barbara	Alameda

A stratified two phase two stage sampling scheme was used. Sampling effort was allocated among regions, county and firm size by total employment levels. Firms were grouped by employment size into three categories - 1-9 employees (small), 10-99 employees (medium), 100+ employees (large). Samples were drawn from these groups based on the employment size, not the number of firms

in the group. Therefore, if 80 percent of the employment is in the large firm category, then that portion of the sampling effort would be allocated to that group.

The resulting sampling scheme can be illustrated with the following general statement. The first phase of the sampling effort involved drawing a sample of firms from each of the two regions and interviewing them by telephone. This procedure involved two additional levels of stratification (county and employment size). The second phase of the sampling effort drew a subset of Phase I firms. Phase II firms, along with a random number of workers, were surveyed on site.

The Phase I telephone survey sampled 167 firms. The telephone questionnaire (see Appendix B) consisted of 48 questions dealing with hiring practices, compensation, future outlook, etc. The interviewer was instructed to conduct the interview with the most knowledgeable labor person. Usually this person was the owner or the general manager. The questionnaire took an average of 50 minutes to administer. Table A2 compares by firm size the number of firms in the sample universe and the number of firms surveyed during Phase I.

Table A2
Number of Firms in Sample Universe
Compared to Firms Sampled
Phase I

<u>Firm Size</u>	<u>Sample Universe</u>	<u>Surveyed</u>
Small	450	24
Medium	420	112
Large	40	31

In order to reach the sampling requirements of the sampling design, every large firm in the sample universe needed to be sampled. Unfortunately, large firms turned out to be the most difficult firms in terms of completing the survey. After extensive effort, 31 out of 40 large firms participated in the survey. Call results for the telephone survey are presented in Table A3 by firm size.

Table A3
Call Results by Firm Size

<u>Call Status</u>	<u>Small</u>	<u>Medium</u>	<u>Large</u>
Usable	51	180	0
Unusable	25	93	9
Participated	24	112	31
Total	100	385	40

Usable refers to firms which have not been reached and could possibly be used in the survey (e.g., no answer, call back, busy, etc.). Unusable refers to firms which cannot be used in the survey (e.g., telephone not in service, refusal, etc.). Originally 205 firms were to be sampled during this phase of the project. However, due to the small number of large firms and the length of the interview, it was decided the original number of small and medium firms would be sampled and as many of the large firms as possible would be sampled.

At the conclusion of the Phase I interview the firm was asked to participate in the Phase II interview. A total of 85 firms agreed to participate in the second phase field survey portion of the project; 10 were small firms, 52 were medium firms and 23 were large firms. As in Phase I, large firms proved the most difficult in setting up the field interview. The field survey consisted of two separate surveys. Employers were asked additional questions regarding skill requirements (see Appendix B) and workers were asked a series of 31 questions (see Appendix B). One interviewer was used during the course of this portion of the study. Because a trained interviewer with knowledge of the coding system conducted the survey, each field interview took less than 5 minutes to complete. The employers' survey was conducted first. At the conclusion of that interview, the field interviewer randomly selected workers to be surveyed. The interviews were conducted during working hours in a private environment where no one could hear the worker's responses. A total of 455 worker interviews were conducted; 28 workers were from small firms, 234 workers were from medium firms and 193 workers were from large firms.

STATEMENT OF STATISTICAL RELIABILITY

The issues surrounding statistical reliability are many. They deal with bias, errors and sampling imperfections which are a part of every empirical research project. While these items can impact the results of study, they are difficult at best to measure. This project is no different. First, the statistical reliability of the information presented in this report will be presented independent of potential errors. Second, a discussion of possible bias and errors will be given. However, it is beyond the scope of this project to quantify these potential problems.

Reliability is measured in terms of error and confidence. For the employers' telephone survey, the tolerable error is $\pm 7.5\%$ at the 95% confidence level. This is based on a sample of 167 firms. For the workers' field survey, the tolerable error is $\pm 4.5\%$ at the 95% confidence level. This is based on a sample of 455 workers. For the employers' field survey, the tolerable error is $\pm 10.5\%$ at the 95% confidence level. This is based on a sample of 85 firms. By assuming the set of 85 firms is representative of the full 167 firms, the error level could be dropped to the telephone survey level. Unfortunately, in testing the statistical difference between those who participated and those who did not, the results are mixed. While current wage rates for different worker classifications are not different (from a statistical view) between the groups, variables like sales, average length of employment by worker classification and employment levels are different. Those firms who participated in the Phase II interviews tended to have higher sales, greater average lengths of employment and higher employment levels.

The potential areas for error, biases, etc. are varied. They include nonresponse bias, coverage bias, data processing errors, measurement errors, response error, interviewer error, sample frame imperfection, etc. Three areas with the potential for error will be discussed here. They are coverage bias, nonresponse bias and measurement errors. The sample frame consisted of roughly 75 percent of the possible nursery population. In discussions with industry leaders, the feeling was that the firms not surveyed were somewhat different, but this is more in terms of product than labor force. The nonresponse bias could be a problem, especially for large firms. Finally, measurement error potential arose with the telephone questionnaire and its many open ended questions. The nature of the questions asked in Phase II required employers to consider things in a different, more

formal way than the Phase I telephone survey. For example, employers do not think explicitly in terms of skill categories. While these errors may have impact at the margin, it is not expected that they would change the direction of the results.

APPENDIX B

**SURVEY QUESTIONNAIRES
with selected descriptive statistics**

**Selected
Descriptive Survey Results
for
CALIFORNIA NURSERY
TELEPHONE EMPLOYER SURVEY**

Q1. What percentage of the nursery stock you produce is from each of the following 4 categories? (The 4 categories should total 100%)

- 19.5 % Shade trees and shrubs
e.g., Coniferous Evergreen
Broad-Leaved Evergreens
Deciduous Shade Trees
Deciduous Shrubs
- 71.8 % Decorative plants/ground cover
e.g., Rose Plants
Herbaceous Ornamental, Annual and Perennial Plants, and Aquatics
Bulbs, Corms, Rhizomes, Pips
Decorative Plants, Foliage or Florist's Pot Plants Including
Orchids, etc.
Cacti and Succulents
Ground Cover, Ivy, Ornamental Strawberry, Ice Plants, etc.
- 4.5 % Food trees and plants (Fruit, nuts, vegetables)
e.g., Deciduous Fruit and Nut Trees
Grapevines and Kiwi Plants
Citrus Fruit Trees
Other Subtropical and Tropical Fruit Trees, including
Avocado, Strawberry and Bushberry, etc.
Vegetable Plants
- 4.1 % Specialty crops
(please specify) Sod and Turf
- e.g., Sod (Turfgrass)
Jojoba

- Q2. What is the total acreage of your nursery? mean = 82; 30% < 10 ac; 75.5% < 50 ac
- Q3. How many production sites are managed from your headquarters' office? mean = 1.8; 57.9% = 1 site
- Q4. What is the amount of production square footage under cover? mean = 321,787 sq ft (7.16 ac); 23.4% < 10,000 sq ft; 53.8% < 100,000 sq ft
- Q5. Are you a member of any association or co-ops?
84.3% Yes (ANSWER Q5a & Q5b) 15.7% No (SKIP TO Q6)
- Q5a. What is the name of it? CAN 44.3%; Flower Associations 37.1%
- Q5b. What is the purpose of it?
Information/Education 71.4%; Legislative Representation 38.6%; Marketing/PR 25.0%
- Q6. Do your employees attend regularly scheduled safety meetings?
86.2% Yes (ANSWER Q6a - c) 13.8% No (SKIP TO Q7)
- Q6a. How often? 42.3% monthly; 15.3% quarterly; weekly or bi-weekly 20.2%
- Q6b. Who sponsors the meetings? Company 80.9%
- Q6c. Who conducts the meetings? Company 87.4%
- Q7. What is the outlook for your business?
- | | Excellent | Good | Fair | Poor |
|------------|-----------|-------|-------|-------|
| this year? | 5.4% | 28.1% | 38.9% | 27.5% |
| next year? | 9.8 | 41.7 | 31.9 | 16.6 |
| 3 years? | 12.4 | 49.0 | 23.4 | 15.2 |
- Q8. Which of the following categories best describes your total estimated gross sales for 1991?
- | | |
|---------------------------------|--------------------------------------|
| <u>5.4%</u> Less than \$100,000 | <u>9.5%</u> \$5 million - 10 million |
| <u>21.6</u> \$100,001 - 500,000 | <u>4.7</u> Over \$10 million |

243 \$500,001 - 1 million

345 \$1 million - 5 million

(11.4% DK/Ref)

- Q9. How many years have you been in business? mean = 28.9 years (median 23 yr; mode 20 yrs): 2.4% < 5 yrs
- Q10. Do you have plans for expansion? 31.9% Yes (ANSWER Q10a) 68.1% No (SKIP TO Q11)
- Q10a. Will it be within.....?
20.6% 6 months 22.9% 1 year 29.2% 3 years 27.1% Over 3 years
- Q11. What impact do your competitors have on how you operate your business now? How about.....
- Larger firms? none 41.3%: price 34.1%: imports 15.0%
- Small firms? none 80.6%: price 14.0%
- Q11A. How about in the future? none 52.9%: price 20.0%: imports 11.4%
- Q12. Has the drought had an effect on your hiring this year?
34.1% Yes (ANSWER Q12a) 65.9% No (SKIP TO Q13)
- Q12a. What effect has it had? decrease 93.2%
- Q13. Has the drought had an effect on your firm's overall employment?
32.3% Yes (ANSWER Q13b) 67.7% No (SKIP TO Q14)
- Q13a. What effect has it had? decreased 94.4
- Q14. Has the drought had an effect on your firm's sales?
52.1% Yes (ANSWER Q14a) 47.9% No (SKIP TO Q15)
- Q14a. What effect has it had? decreased 95.2%
- Q15. Has the drought had an effect on your firm's production level and product mix?
44.9% Yes (ANSWER Q15a) 55.1% No (SKIP TO Q16)
- Q15a. What effect has it had? production decrease 42.5%: product diversification 26.4%
- Q16. What impact has urbanization had on your business?
Land? none 53.9%: increase cost 15.6%: less land available 21.6%
Regulations? none 49%: too many 33.1%: paperwork 10.6%
Spraying? none 43.1%: too many regulations 24.2%
Water? none 59.7% (have own supply 16.8%): had to cut back 15.0%: cost of business 9.0%
Other? increased sales 41.9%: decreased sales 12.9%: vandalism 19.4%: too much traffic 16.1%
- Q17. How do you think urbanization will affect your business within the next 3 years?
none 38.3%: forced out of business 13.2%: increased sales 16.2%
- Q18. Do you see your product mix changing in the future?
54.0% Yes (ANSWER Q18a) 46.0% No (SKIP TO Q19)
- Q18a. How? more drought resistant product 23.8%: more diversification 27.5%: more responsive to demand 31.3%
- Q19. Do you expect certain work skills to be in short supply in future?
18.2% Yes (ANSWER Q19a) 81.8% No (SKIP TO Q20)
- Q19a. Which ones? Technical 33.3%: Knowledgeable workers 26.7%: Field/shipping 23.3%: Driver/equipment operator 13.3%
- Q20. Do you think the future will bring increased mechanization to this industry?
61.8% Yes (ANSWER Q20a) 38.2% No (SKIP TO Q21)
- Q20a. (IF YES:) How will this affect your labor needs, i.e., skills required?
reduce labor needs 52.0%: no effect 35.3%: increased skilled labor needs 21.6%
- Q21. Do you expect any significant labor shortages or surpluses in the future?
32.7% Yes (ANSWER Q21a) 67.3% No (SKIP TO Q22)
- Q21a. What will they be and why? Surplus 57.7%: Shortage 15.4%: Shortage skilled 13.5%

Q22. How many employees in your firm are in...?

- a. Production/shipping? mean = 48.8; median = 18; mode = 15
 b. Management or administration positions, sales, customer service? mean = 10; median = 4; mode = 2

Q23. How many production/shipping workers do you expect you'll have...

this time next year? mean = 50.5; median = 20; mode = 15
 busiest time next year? mean = 63.6; median = 25; mode = 12

Q23a. (IF INCREASE OR DECREASE:) Why are you expecting the change?

Seasonal weather 40.0%; Economic factors 53.3%

Q24. Of the production/shipping workers, how many employees do you have who are...

	Mean (Median)	
	Currently	Busiest time
permanent full-time	<u>43.7 (16)</u>	<u>46.8 (17)</u>
permanent part-time	<u>1.0 (0)</u>	<u>1.1 (0)</u>
seasonal full-time	<u>4.4 (0)</u>	<u>14.3 (0)</u>
seasonal part-time	<u>1 (0)</u>	<u>8 (0)</u>

Q25. Which month(s) is (are) the busiest time for you?

Jan	16.2%	Jul	26.3
Feb	37.1	Aug	25.1
Mar	54.5	Sep	19.2
Apr	65.9	Oct	18.0
May	76.6	Nov	18.0
Jun	36.5	Dec	20.4

Q26. During the busiest time, how many total employees are in management, administration, sales, and customer service positions? mean = 10.5; median = 4.5
= 2

THE REMAINING QUESTIONS APPLY ONLY TO YOUR PRODUCTION AND SHIPPING WORKERS.

Q27. We'd like to know how many workers you have in each of the following categories...

	Mean	Median	Mode
Field/Shipping	<u>38.4</u>	<u>14</u>	<u>5</u>
Foreman/Crew Leaders	<u>5.3</u>	<u>2</u>	<u>1</u>
Technical (propagator, pest control, pruning)	<u>7.0</u>	<u>2</u>	<u>1</u>

Q28. During the last year how many workers did you hire and how many workers did you promote from within for the following categories?

Field/Shipping workers did you hire? mean = 15; median = 2.5; mode = 0 (40.1%)
 Foreman/Crew Leaders did you hire? mean = .1; median = 0; mode = 0 (92.6%)
 promote? mean = .7; median = 0; mode = 0 (68.1%)
 Technical workers did you hire? mean = .2; median = 0; mode = 0 (91.5%)
 promote? mean = .4; median = 0; mode = 0 (87.6%)

Q29. What is the current average length of employment for....

Field/Shipping workers? mean = 5.7 years; median = 5; mode = 5
 Foreman/Crew Leader? mean = 9.8 years; median = 10; mode = 10
 Technical workers? mean = 6.8 years; median = 6; mode = 5

Q29a. Has the length of employment increased over the past few years?
52.2% Yes (ANSWER Q29b) 47.8% No (SKIP TO Q30)

Q29b. How? Better work environment 67.9%; Stable labor force 38.1%; Economic conditions 10.7%

Q30. What type of skills must each of the following have? Please be as specific as possible.

Field/Shipping: Willingness to be train 25.1%; Read 22.8%; Write 18%; Basic Math 28.1%; Basic knowledge of Plants 24.6%; Follow instructions 37.7%;

Manual Dexterity 31.7%: Good attitude 24.0%: Drive car/truck 12.6%

Foreman/Crew Leaders: Read 21.6%: Write 21.6%: Basic Math 16.2%: Basic knowledge of Plants 22.2%: Good attitude 10.2%: Experienced 13.8%: Get along with people 14.4%: Management skills 62.3%: Bilingual 21.6%

Technical: propagator Willingness to be train 14.4%: Basic Knowledge of Plants 10.2%: Propagation Skills 26.9%
 pest control Willingness to be train 16.2%: Read 15.6%: Basic Math 10.8%: Safety awareness 13.8%: Knowledge of Regulations 21.0%: Have degree 12.0%
 pruning Willingness to be train 18.6%: Know how to prune 13.8%
 other Drive 6.0%

Q30a. Which of the above skills (not labor categories) are the most difficult to find?
no skill is hard to find 16.8%: Good attitude 10.2%: Management skills 16.8%

Q31. How much on-the-job training do newly hired employees need?

	<u># of hours</u>
Field/Shipping	<u>≤ half day 11.1%</u> <u>1 day to 1 wk 25.5%</u> <u>1 wk to 1 mo 26.8%</u> <u>>1 mo 33.3%</u>
Foreman/Crew Leader	<u>>1 mo 91.0%</u>
Technical Workers:	
Propagator	<u>≤ half day 10.1%</u> <u>1 day to 1 wk 12.1%</u> <u>1 wk to 1 mo 16.2%</u> <u>>1 mo 59.6%</u>
Pest control	<u>1 day to 1 wk 13.6%</u> <u>1 wk to 1 mo 20.4%</u> <u>>1 mo 56.3%</u>
Pruning	<u>1 day to 1 wk 20.5%</u> <u>1 wk to 1 mo 16.9%</u> <u>>1 mo 44.6%</u>

Q32. Is there plenty of labor available to meet your needs throughout the year for each of the following categories?

	<u>Yes</u>	<u>No</u>
Field/Shipping	<u>95.8%</u>	<u>4.2%</u>
Foreman/Crew Leader	<u>89.7</u>	<u>10.3</u>
Technical Workers	<u>90.8</u>	<u>9.2</u>

Q32a. If "no" to any of the above, what time of year is it hard to find workers? (26 firms)

Jan	11.5%	Sep	11.5%
Feb	15.4	Dec	19.2
Mar	19.2		
Apr	23.1	Year Round	26.9%
May	19.2		

- Q33. How do you find workers for your open positions?
 Field/Shipping: Word of mouth 68.9%; Worker foreman 37.7%; EDD 3.6%
 Foreman/Crew Leader: Promote from within 48.5%; Word of mouth 17.4%;
Advertise 10.8%; EDD 1.2%
 Technical Workers: Word of mouth 48.5%; Advertise 10.1%; Promote from within 26.3%
EDD 4.0%
- Q34. Do you use the services of a Farm Labor Contractor on a regular basis?
10.3% Yes 89.7% No
- Q35. Have you ever used EDD (Employment Development Department) to assist you in finding workers?
22.2% Yes (ANSWER Q35a & 35b) 77.8% No (ANSWER Q35c)
- Q35a. What positions and what time of year? Labor 19.4%; Field/Production 38.7%;
Technical 32.3%
Winter 20.0%; Spring 46.7%; Summer 20.0%; Year round 13.3%
- Q35b. Were you satisfied with the workers you got? 47.1% Yes 52.9% No
 (NOW SKIP TO Q36)
- Q35c. Were you aware that EDD offers such services? 69.8% Yes 30.2% No
- Q36. Were you aware that EDD offers employment programs for workers? 66.7% Yes 33.3% No
- Q37. What could the State government do to improve the outlook for the California nursery industry?
Reduce imports 18%; Reduce regulations 48.5%; Provide more gov't support 14.4%
- Q38. What is the primary language used by your workers? How about secondary?

	<u>Primary Language</u>	<u>Secondary Language</u>
Field/Shipping	<u>Spanish 87.3%</u>	<u>English 56.6%</u>
Foreman/Crew Leader	<u>Spanish 75.3%</u>	<u>English 64.7%</u>
Technical Workers	<u>Spanish 72.6%</u>	<u>English 59.0%</u>
- Q39. What language is used to communicate instructions to your workers?
 Field/Shipping Spanish 75.6%
 Foreman/Crew Leader English 49.7%; Spanish 32.3%
 Technical Workers Spanish 58.6%
- Q40. Do you have language communication problems with your workers? 24.8% Yes 75.2% No
- Q41. Has the Immigration Reform & Control Act (IRCA) had any impact on you?
43.3% Yes (ANSWER Q41a) 56.7% No (SKIP TO Q42)
- Q41a. How? Paperwork 43.7%; Able to hire legal 21.1%; Keep workers longer 19.7%; More turn-over/higher wages 16.9%
- Q42. Do you pay your workers by the hour or piece?
91.0% Hour (SKIP TO Q43) 0.0% Piece (ANSWER Q42a) 8.4% Both (ANSWER Q42a)
- Q42a. Can you describe it? n/r
- Q43. What's the average base wage (per hour equivalent) earned by employees in each of these categories?

	<u>Means</u>		
	<u>New Hire, no exper.</u>	<u>New Hire with exper.</u>	<u>Current aver. wage</u>
Field/Shipping	<u>\$4.56</u>	<u>\$5.06</u>	<u>\$5.72</u>
Foreman/Crew Leader	<u>\$6.06</u>	<u>\$7.33</u>	<u>\$8.68</u>
Technical Workers	<u>\$5.20</u>	<u>\$6.09</u>	<u>\$7.11</u>

	<u>Modes</u>		
	New Hire, <u>no exper.</u>	New Hire <u>with exper.</u>	Current <u>avgr. wage</u>
Field/Shipping	<u>\$4.25</u>	<u>\$4.25</u>	<u>\$5.00</u>
Foreman/Crew Leader	<u>\$4.25</u>	<u>\$6.00</u>	<u>\$7.00</u>
Technical Workers	<u>\$4.25</u>	<u>\$4.25</u>	<u>\$6.00</u>

Q43a. Are these wages low, average, or high for the industry?
6.1% low 66.0% average 27.9% high

Q43b. How do you arrive at a starting salary for a newly hired employee?
Minimum wage 58.7%; Based on current market 20.4; Worker's background 14.4%

Q44. Are annual wage increases given? 71.7% Yes (ANSWER Q44a) 28.3% No (SKIP TO Q45)

Q44a. What was the average percent increase last year? mean = 6.99%
 mode = 5.00%

Q45. Can annual bonuses be earned? 59.4% Yes (ANSWER Q45a) 40.6% No (SKIP TO Q46)

Q45a. What was the average bonus for last year? mean = \$ 274.47
 mode = \$ 200.00

Q46. Do you offer any benefits to your...	<u>YES</u>	<u>NO</u>
full time employees	<u>77.4%</u>	<u>22.6%</u>
part-time employees	<u>80</u>	<u>92.0</u>
seasonal employees	<u>16.9</u>	<u>83.1</u>

Q47. What are 3 problems facing the California nursery industry today?

Water/Drought 47.3%

Regulations 43.7%

Imports 34.7%

Pesticide Regulations 25.7%

Others - Urbanization (12%); Workman's Comp Insurance (15.6%); Labor Costs (13.8%);
 The Economy (15.6%)

Q48. What is the single greatest threat to your business?

Imports 26.9%

Water/Drought 21.2%

Regulations 14.1%

The Economy 14.1%

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION.

**Selected
Descriptive Survey Results
for
CALIFORNIA NURSERY
EMPLOYER FIELD SURVEY**

Q1. Are the production workers in your company represented by a union?

6.0% Yes (SKIP TO Q2)

94.0% No (CONTINUE)

Q1A. Do you expect unionization to happen within the next 2 years?

n/l Yes

86.1% No
(13.9% refusal)

Q2. Do you have a minimum educational level for your.....

Field workers 2.4% Yes 97.6% No If yes, what is it? (second grade /experienced)

Shipping workers 8.3% Yes 91.7% No If yes, what is it? (12th grade 85.7%)

Technical workers 26.2% Yes 73.8% No If yes, what is it? (12th grade 34.8%; Technical training 34.8%)

Crew leader/foreman 14.3% Yes 85.7% No If yes, what is it? (12th grade 30.4%)

Q3. How important are each of the following skills in a field worker? As I read each one, please tell me if the skill is required, nice to have, or not needed for their job.

	Required	Nice To Have	Not Needed
a. Oral communication skills	31.0%	60.7%	8.3%
b. Bilingual ability	3.5	70.6	25.9
c. Ability to write legibly	3.5	63.5	32.9
d. Ability to perform basic math computations	6.0	56.6	37.3
e. Ability to read & follow instructions	19.3	68.7	12.0
f. Willingness to work with close supervision	72.9	21.2	5.9
g. Ability to work independently	42.4	52.9	4.7
h. Ability to use a computer terminal	0.0	8.2	91.8
i. Knowledge of horticulture	4.7	54.1	41.2
j. Knowledge of pesticides & herbicides	9.4	51.8	38.8
k. Pruning skills	18.8	34.1	47.1
l. Knowledge of gardening tools	27.1	47.1	25.9
m. Knowledge of sales techniques	1.2	11.8	87.1
n. Public contact skills	2.4	23.5	74.1
o. Valid driver's license	7.1	50.6	42.4
p. Good driving record	16.7	41.7	41.7
q. Ability to lift at least 100 lbs.	20.0	43.5	36.5
r. Ability to operate machinery	5.9	52.9	41.2
Any other required skill not mentioned above?	<u>7.4</u> Yes	<u>92.6</u> No	
Please describe			

Q4. How important are each of the following skills in a shipping worker? As I read each one, please tell me if the skill is required, nice to have, or not needed for their job.

	Required	Nice To Have	Not Needed	Not Applicable
a. Oral communication skills	60.7%	34.5%	2.4%	2.4%
b. Bilingual ability	17.9	70.2	9.5	2.4
c. Ability to write legibly	56.0	36.9	4.8	2.4
d. Ability to perform basic math computations	50.6	36.1	10.8	2.4
e. Ability to read & follow instructions	64.3	33.3	0.0	2.4
f. Willingness to work with close supervision	75.9	19.3	2.4	2.4
g. Ability to work independently	60.7	33.3	3.6	2.4
h. Ability to use a computer terminal	2.4	21.7	73.5	2.4
i. Knowledge of horticulture	13.1	56.0	28.6	2.4
j. Knowledge of pesticides & herbicides	6.0	42.9	48.8	2.4

k. Pruning skills	9.5	33.3	54.8	2.4
l. Knowledge of gardening tools	8.3	44.0	45.2	2.4
m. Knowledge of sales techniques	8.3	41.7	47.6	2.4
n. Public contact skills	18.1	51.8	27.7	2.4
o. Valid driver's license	41.0	38.6	18.1	2.4
p. Good driving record	49.4	32.5	15.7	2.4
q. Ability to lift at least 100 lbs.	24.1	47.0	26.5	2.4
r. Ability to operate machinery	25.0	60.7	11.9	2.4
Any other required skill not mentioned above?	<u>12.7% Yes</u>	<u>87.3% No</u>		

Q5. How important are each of the following skills in a **technical worker**? As I read each one, please tell me if the skill is required, nice to have, or not needed for their job.

	<u>Required</u>	<u>Nice To Have</u>	<u>Not Needed</u>	<u>Not Applicable</u>
a. Oral communication skills	65.5%	26.2%	3.6%	4.8%
b. Bilingual ability	25.9	62.4	7.1	4.7
c. Ability to write legibly	58.8	29.4	4.7	4.7
d. Ability to perform basic math computations	57.6	23.5	14.1	4.7
e. Ability to read & follow instructions	70.6	23.5	1.2	4.7
f. Willingness to work with close supervision	73.8	16.7	4.8	4.8
g. Ability to work independently	75.3	16.5	3.5	4.7
h. Ability to use a computer terminal	4.7	27.1	63.5	4.7
i. Knowledge of horticulture	38.1	45.2	11.9	4.8
j. Knowledge of pesticides & herbicides	51.8	34.1	9.4	4.7
k. Pruning skills	23.5	32.9	38.8	4.7
l. Knowledge of gardening tools	30.6	45.9	18.8	4.7
m. Knowledge of sales techniques	8.2	25.9	61.2	4.7
n. Public contact skills	15.3	43.5	36.5	4.7
o. Valid driver's license	41.2	37.6	16.5	4.7
p. Good driving record	37.6	40.0	17.6	4.7
q. Ability to lift at least 100 lbs.	14.1	49.4	31.8	4.7
r. Ability to operate machinery	42.4	43.5	9.4	4.7
Any other required skill not mentioned above?	<u>12.7% Yes</u>	<u>87.3% No</u>		

Please describe

Q6. How important are each of the following skills in a **crew leader/foreman**? As I read each one, please tell me if the skill is required, nice to have, or not needed for their job.

	<u>Required</u>	<u>Nice To Have</u>	<u>Not Needed</u>	<u>Not Applicable</u>
a. Oral communication skills	85.9%	10.6%	0.0%	3.5%
b. Bilingual ability	54.4	41.2	1.2	3.5
c. Ability to write legibly	68.2	27.1	1.2	3.5
d. Ability to perform basic math computations	65.9	25.9	4.7	3.5
e. Ability to read & follow instructions	77.6	17.6	1.2	3.5
f. Willingness to work with close supervision	78.8	14.1	3.5	3.5
g. Ability to work independently	77.6	16.5	2.4	3.5
h. Ability to use a computer terminal	2.4	31.8	62.4	3.5
i. Knowledge of horticulture	56.5	35.3	4.7	3.5
j. Knowledge of pesticides & herbicides	50.0	39.3	7.1	3.6
k. Pruning skills	44.7	28.2	23.5	3.5
l. Knowledge of gardening tools	58.3	25.0	13.1	3.6
m. Knowledge of sales techniques	9.4	38.8	48.2	3.5
n. Public contact skills	31.8	43.5	21.2	3.5

o. Valid driver's license	56.6	25.3	14.5	3.6
p. Good driving record	58.8	23.5	14.1	3.5
q. Ability to lift at least 100 lbs.	18.8	51.8	25.9	3.5
r. Ability to operate machinery	54.1	38.8	3.5	3.5
s. Ability to delegate work	84.7	10.6	1.2	3.5
t. Ability to schedule work load	72.9	22.4	1.2	3.5
Any other required skill not mentioned above?	<u>17.7%</u> Yes	<u>82.3%</u> No		

Please describe

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION!

**Selected
Descriptive Survey Results
for
CALIFORNIA NURSERY
WORKER FIELD SURVEY**

- Q1. First, how long have you been doing this type of work? (NOT NECESSARILY AT THIS LOCATION)
mean = 10.2; median = 9; Mode = 4; 6.6% ≤ 1 yr Years or Months
- Q1A. Are you a permanent or seasonal employee? 91.4% Permanent 8.6% Seasonal
- Q2. How did you first find out about this job? relative/friend 67.7%; walk-in 24.6%
- Q3. What kind of work do you do here?
(INTERVIEWER CLASSIFY:) 19.3% Technical worker
23.3% Crew leader/foreman
57.4% Field/shipping worker
- Q4. What job did you do when you first came here? Field/shipping worker 91.6%; Crew leader/foreman 2.6%;
Technical worker 5.3%
- Q5. Did you do any other jobs between that first job and the one you do now?
12.4% No Yes (ASK:) What? Technical 2.0%; Crewleader/foreman <1%;
Field/shipping 84.9%
- Q6. When was your last promotion? never 48.7%; of those having promotion: 29.6% ≤ 1 yr; 74.4% ≤ 4 yrs
- Q7. How many hours a week do you work at this job? mean = 46.2 Hours (mode = 40)
- Q8. How much per hour do you get paid here? \$ mean = 6.89; median = 6.00; mode = 4.24
- Q9. How much did you make when you first started working here? \$ 3.94 per hour (median = 4.18; mode 4.25)
- Q10. When did you get your last raise? (PROBE FOR MONTH & YEAR) never 11.4%; ≤ 1 yr 63.5%; ≤ 2 yr 84.4%;
- Q11. What are your future work plans?
78.8% Continue to work here (DO NOT READ)
 Other (SPECIFY) get better job 11.3%; get more education 4.2%; own business 2.8%
- Q12. Do you have another job that you work at besides this one?
6.4% Yes (CONTINUE) 93.6% No (SKIP TO Q13)
- Q12A. What kind of work do you do at the other job? other
- Q12B. How many hours a week do you work at that job? mean = 11.1; median = 8.0 Hours
- Q13. How old are you? mean = 35.6; mode = 23 Age
- Q14. In what country were you born? Mexico 84.0%; US 9.5%
- Q15. How many years did you go to school? 1.6 Years in U.S. (68.1% said 0)
mean = 5.4; mode = 6 Years in other Country (SPECIFY)
- Q16. Are you married? 74.7% Yes 25.3% No
- Q17. Do you have any children? 77.7% Yes (CONTINUE) 22.3% No (SKIP TO Q18)
- Q17A. How many children under 18 do you have? 1.7 Children (30.3% = 0)
- Q18. How far do you live from here? mean = 7.9 Miles (11.5% = 0; 11.2% = 3)
- Q19. In what Country do you now live? US 98.7%; Mexico 1.3%

Q20. What type of housing do you live in?

56.5% House/Condo

25.5% Apartment

12.5% Company-owned housing

mobile home 4.0% Other (SPECIFY)

Q20A. Does your home have running water? 99.3% Yes .7% No

Q21. How do you get to work every day?

21.6% Ride w/another worker who drives

2.6% Picked up by employer

58.4% Drive own vehicle

13.7% Walk

1.8% Bicycle

2.0% Public Transportation

Other (SPECIFY)

[Q22. LANGUAGE OF INTERVIEW:]

13.1% English (SKIP TO Q23)

86% Spanish (CONTINUE)

Q22A. Do you speak any English? 62% Yes (CONTINUE) 38% No (SKIP TO Q23)

Q22B. How well would you say you speak English? Would you say..... (READ CHOICES)

65.8% A little

27.6% A moderate amount, or

6.6% Very well

Q23. Can you read English? 58.4% Yes (CONTINUE) 41.6% No (SKIP TO Q24)

Q23A. How well do you read English? (READ)

54.9% A little

21.2% A moderate amount, or

23.9% Very well

Q24. Can you write in English? (READ)

41.8% Yes (CONTINUE)

58.2% No (SKIP TO Q25)

Q24A. How well can you write in English? (READ)

51.1% A little

21.6% A moderate amount or

27.4% Very well

Q25. Can you read Spanish? 95.4% Yes (CONTINUE) 4.6% No (SKIP TO Q26)

Q25A. How well do you read Spanish? (READ)

12.4% A little

31.3% A moderate amount or

56.2% Very well

Q26. Can you write in Spanish? 93.6% Yes (CONTINUE) 6.4% No (SKIP TO Q27)

Q26A. How well do you write in Spanish? (READ)

12.7% A little

34.3% A moderate amount or

53.1% Very well

Q27. Have you been examined by a doctor within the last year? 54.7% Yes 45.3% No

Q28. Have you ever been injured on the job here? 25.1% Yes (CONTINUE) 74.9% No (SKIP TO Q29)

Q28A. How long ago? 69.3 > 1yr

Q28B. Were you unable to work at your regular job because of the injury? 66.4% Yes 33.6% No

Q29. How long have you lived in the United States of America? 14.4 -Weeks/months/years

(mode = 7 yrs; 3.5% ≤ 1 yr)

Q30. If you are not a U.S. citizen have you applied for amnesty? 39.4% Yes 9.6% No 46.6% N/A

Q31. Were you aware that in the April of 1990, the US Government counted the people who lived in the United States?

91.4% Yes (CONTINUE) 8.6% No

Q31A. Did you live in the US during this census?

94.7% Yes (CONTINUE) 5.3% No (THANK & TERMINATE INTERVIEW)

Q31B. Do you remember either filling out a census form or having someone ask you about yourself, your family, or your home?

69.4% Yes 30.6% No

THANK YOU VERY MUCH FOR YOUR TIME AND HELP!

Sex: 79.8% Male 20.2% Female